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NEOTROPICAL MICROLEPIDOPTERA, IX

REVISION OF GENUS *PSEUDATTERIA* (LEPIDOPTERA: TORTRICIDAE)¹

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The species of the genus *Pseudatteria* Walsingham with their comparatively large size and bright coloring appear as the most striking moths among the entire South American Tortricidae; together with two other superficially similar genera, *Atteria* Walker and *Idolatteria* Walsingham, they represent an endemic group of the Neotropical fauna. Meyrick (1908) established a separate family Ceracidae which included the Oriental and Palaearctic genus *Cerace* Walker. Misled by some superficial resemblance of the Neotropical *Atteria* with *Cerace*, the same author (Meyrick, 1910) considered them to be synonyms of a common genus. In accordance with this the *Pseudatteria* species, not separated at that time from *Atteria*, should also become members of the family Ceracidae. Later Meyrick (1912) included this "family" in the Tortricidae, and treated it (Meyrick, 1913) as a group of genera, not naming it separately.

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² Deceased May 6, 1966.

Busck (1932) probably overlooked the publication of the name Ceracidae by Meyrick and established for the same group a synonymic family name Atteriidae. Clarke (1955) was the first who turned his attention to the male genitalia of *Pseudatteria* and stressed the close relationship of this genus to the genera *Polyortha* Dognin and *Ardeutica* Meyrick. Studies of the present author have confirmed this relationship in the morphology of the female genitalia also. Moreover, these studies have shown that the genera *Atteria* and *Idolatteria* have nothing in common with *Pseudatteria* except for the superficial resemblance; *Atteria* should be placed in Anacrusini (new status) and *Idolatteria* in the tribe Archipini. The genera *Pseudatteria*, *Polyortha*, and *Ardeutica* require separation as the new tribe Polyorthini, established in this paper. All of the above-mentioned genera are quite distinct from the tribe Ceracini which maintains its recognized status (Obraztsov, 1954.)

This paper represents the first revision of the genus *Pseudatteria*. Until the present, most of the species have been known from the original descriptions only; additional information was published by Clarke (1958) for the species established by Meyrick. Favorable circumstances have given the present author an opportunity to examine the type specimens of all known species, to figure them and their genitalia, to establish the synonymy, to study extensive comparative materials, and to describe seven new species and one new subspecies. The paper deals with 24 species of the genus *Pseudatteria*; some species are represented by females only.

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contributed much to the accumulation of the Neotropical Microlepidoptera in the U.S. National Museum.

Polyorthini, new tribe

Tineidae (in part).—Dognin, 1912, *Hétérocères nouveaux de l'Amerique du Sud*, fasc. 6, p. 50.

Tortricidae, groups B (in part) and D (in part) Meyrick, 1913, *in* Wytzman, *Genera insectorum*, fasc. 149, pp. 20 and 47.

Atteriidae (in part) Busek, 1932, *Bol. Biol.*, vol. 21, p. 44.

Ceracidii (in part).—Diakonoff, 1939, *Zool. Meded. Rijksmus. Nat. Hist.*, vol. 21, p. 128.

Head with face more or less smooth. Antenna simple or false serrate because of slightly raised scales; in male shortly pubescent with setae protruding, cilia not longer than width of antennal shaft, in female with setae only. Labial palpus porrect, moderate to very long, tapering distad, rarely with second segment dilated by scales. Vein R_5 of forewing to costa or apex; no costal fold in male.

MALE GENITALIA.—Eighth abdominal segment with large, well-developed coremata, one on each side of segment; clusters of long hair arising from these coremata, in resting position hidden in folds of valvae. Uncus moderate to rather long, variously shaped, often with an apical thorn directed ventrad and at base generally accompanied by a soft papilla; socius moderate to large, hairy, generally padlike with broad base, pendant, occasionally modified; gnathos with lateral arms distally fused into a middle process. Valva very broad, folded outward along sacculus, crossing it longitudinally at about middle, and thus forming a kind of pocket opened costally and externally; sacculus slightly sclerotized at base, then occasionally prolonged as a narrow strip along edge of fold of valva; costa sometimes sclerotized, occasionally with a rudimentary harpe; no pulvinus and processus basalis. Fultura superior shaped as a transverse bar between upper inner angles of valvae; vallum penis generally with a lamina praeputialis. Aedeagus generally thick, robust, occasionally slender, mostly with an apical process, often with sculptures in apical portion; cornutus as a rule single, large, corniform or variously platelet shaped; rarely more than one cornutus or no cornuti; cuneus of little spines or thorns often present.

FEMALE GENITALIA.—Papillae anales broad, pelmiform, hairy; eighth abdominal segment rather short; ovipositor, if developed, formed by three narrow, subcylindrical, retractable segments, and ending with minute papillae anales. Sinus vaginalis wide, more or less infundibular, deep or rather flat, located caudad of seventh abdominal segment, and as broad as latter; sterigma simple, composed of a rather narrow, band-shaped, transverse lamella antevaginalis

occasionally fused with adjoining intersegmental membrane showing in this case a somewhat modified structure; lamella postvaginalis generally not defined, membranous, forming dorsal wall of sinusal funnel. Antrum tubular, generally sclerotized, always rather short and wide, as a rule with two lateral colliculi, one on each side of antrum. Corpus bursae generally elongate, much longer than broad, occasionally somewhat ovate, in greatest portion membranous with very fine sculpture; cervix bursae as a rule not separated from corpus bursae, merely definable morphologically, more or less sclerotized and sculptured, as broad as or broader than antrum, occasionally fused with it; ductus seminalis opening into caudal portion of cervix bursae, close to antrum; cestum elongate, more or less sclerotized, often with a longitudinal carina, located or starting in cervical area of bursa copulatrix, rarely cephalad of it or missing; signum generally present, shaped as slightly sclerotized, small area or plate, not always distinctly separated from adjacent surface of corpus bursae, generally with a transverse, slightly elevated carina and/or various sculptures.

REMARKS.—The valva of the Polyorthini is very peculiar and unique for the entire family Tortricidae. If spread, it is extraordinarily broad, but normally it is folded along the sacculus, and the broad infrasaccular lobe, unbent externally, forms together with the inner lobe of the valva a kind of pocket opened externally and costally. This pocket serves as a receptacle for the cluster of long hairs of the corema. The folded valva is foliaceus in its shape. Morphologically the external lobe of the valva is probably the same as the infrasaccular portion of the valva of some species of Archipini and Anacrusiini, in which it is rudimentary and not straight.

The female genitalia of the Polyorthini are characterized by a wide ostium bursae, and a low differentiation of the separate sections of the bursa copulatrix. In most species of the tribe, merely the antrum is separated from the bursa while the cervix bursae is united with the corpus bursae. Only some few species have the caudal portion of the cervical section narrower than the remaining corpus bursae. The ductus seminalis opens into this narrow portion, but in the species without this contraction the cervical section of the corpus bursae directly receives the ductus seminalis. In connection with this morphology, there are reasons to indicate the caudal sclerotized sculpture of the wall of the corpus bursae as a cestum, leaving the name of the signum for the sculpture located closer to the fundus bursae.

In regard to the genitalia, the tribe Polyorthini is rather close to the Cnephasiini. The position of vein R_5 of the forewing, running in the Polyorthini to the costa or the wing apex, speaks rather for a more ancient origin of this tribe and its probable relationship to the Tor-

tricini. The tribe includes the genera *Polyortha* Dognin, *Ardeutica* Meyrick, *Pseudatteria* Walsingham, and others not yet described and presently in *Polyortha*. Thus, a key to the genera of the Polyorthini cannot be given until a revision of the genus *Polyortha* is completed.

Genus *Pseudatteria* Walsingham, 1913

FIGURES 1-12

Atteria (in part).—Butler, 1872, *Cistula* Ent., vol. 1, pp. 89-90.—Felder, 1872, *Heterocera*, in *Reise der österreichischen Fregatte Novara*, Zool. Theil, vol. 2, zweite Abth., p. 3.—Butler, 1874, *Lepidoptera Exotica*, p. 178.—Druce, 1901, *Ann. Mag. Nat. Hist.*, ser. 7, vol. 7, pp. 439-440.—Dognin, 1904, *Ann. Soc. Ent. Belgique*, vol. 48, pp. 132-133.—Meyrick, 1909, *Trans. Ent. Soc. London*, p. 14.—Dognin, 1912, *Hétérocères nouveaux de l'Amérique du Sud*, fasc. 6, p. 51.—Meyrick, 1912, *Trans. Ent. Soc. London*, 1911, p. 676.

Pseudatteria Meyrick, 1912, in Wagner, *Lepidopterorum catalogus*, pt. 10, p. 16 [quotation of an unpublished name]; 1913, in Wytzman, *Genera insectorum*, fasc. 149, p. 22. [Type species: *Atteria volcanica* Butler, 1872.]

Pseudatteria Walsingham, 1913, *Biologia Centrali-Americana*, *Lepidoptera Heterocera*, vol. 4, p. 214; 1914, *op. cit.*, vol. 4, pp. 267-269.—Meyrick, 1917, *Trans. Ent. Soc. London*, p. 6, 1924, *Exotic Microlepidoptera*, vol. 3, pp. 108-109; 1930, *op. cit.*, vol. 3, pp. 606-608; 1932, *op. cit.*, vol. 4, p. 254; 1936, *Arb. Morph. Taxon. Ent. Berlin*, vol. 3, p. 104.—Clarke, 1958, *Catalogue of the type specimens of Microlepidoptera . . . described by Edward Meyrick*, vol. 3, p. 195.

TYPE SPECIES.—*Pseudatteria potamites* Walsingham, 1913 (by monotypy and original designation.)

DESCRIPTION.—Head smooth, sides of vertex with longer and raised scales. Antenna simple or pseudoserrate, in male densely short ciliated and with setae protruding; cilia not longer than width of antennal shaft, setose in female only; scapus long, somewhat flattened. Labial palpus about four times width of eye or even longer, porrect, slightly curved downward; basal segment pronounced; second segment with appressed scales, longest of all segments, almost uniformly broad along whole length; terminal segment rather long, acute. Proboscis moderate. Thorax smooth.

Forewing smoothly scaled, elongate-subovate; costa strongly arched; apex broadly rotundate, termen obliquely convex; tornus broadly rotundate; dorsum almost straight, basally arched. No costal fold in male. Twelve veins, all separate; S_c very gently bent; R_1 from before middle of discal cell; R_2 more than twice as near to R_3 as to R_1 ; R_3 twice as remote from R_4 as R_4 is from R_5 ; latter vein running to apex; internal vein of discal cell from between R_1 and R_2 ; M_1 , M_2 , M_3 , and Cu_1 almost equidistant; Cu_1 from lower angle, Cu_2 from about two-thirds of discal cell; A_1 weak; basal fork of A_{2+3} shorter than one-fourth of entire vein.

Hindwing subtrapezoidal, slightly narrower than or as broad as forewing; costa almost straight or slightly undulate; apex rotundate; termen flat or slightly sinuate; tornus broadly rotundate; dorsum very slightly convex, strongly curved basally. Eight veins; S_c almost straight; R and M_1 more or less approximated in basal third, then diverging; M_2 and M_3 parallel; M_3 and Cu_1 connate or slightly separate at lower angle of discal cell; Cu_2 from three-fourths of discal cell; all three of anal veins present. No cubital pecten.

MALE GENITALIA.—Eighth abdominal segment with large lateral coremata bearing clusters of long hairs. Uncus moderately long, elongate-scapiform, flatly calathiform or somewhat obcordate, in last two cases on a narrow stalk, or equally broad, slightly flattened dorsoventrad, and with a transverse, ventral carina; tip of a scaphiform or calathiform uncus generally with an apical thorn directed ventrad and often with a small papilla at base of this thorn; middle process of gnathos short; socius weak, haired, more or less dilated, pendant, and with a broad base. Tegumen rather broad with narrow pedunculi. Valva in folded position rotundate-foliaceous, oblong; costa sometimes strengthened, especially at base, occasionally with a rudimentary harpe; sacculus generally somewhat dilated at base. Fultura superior as a simple, transverse bar; vallum penis generally with a more or less large, finely spinose lamina praeputialis; futura inferior rather high. Aedeagus generally thick and somewhat stout, occasionally rather slender, in both cases with a process at tip, and in distal portion sometimes with little scobination; caulis practically absent; coecum penis rather rudimentary; a strong generally coniform cornutus, sometimes also a cuneus of minute, more or less numerous thorns.

FEMALE GENITALIA.—Papillae anales pelmiform, oblong, soft, and haired. Sinus vaginalis wide, more or less infundibular. Antrum shortly tubular, as wide as sinus vaginalis or narrower, generally with lateral colliculi, one on each side of antrum; no separate ductus bursae; corpus bursae elongate, sometimes very long; cervix bursae not differentiated, united with corpus bursae, generally stronger sclerotized than latter and sculptured, and merely perceptible morphologically as receiving ductus seminalis; in subgenus *Pseudatteria* cervical section of corpus bursae broader than antrum, in remaining subgenera only as broad as antrum, and fused with it; cestum generally present, located in cervical section of corpus bursae, generally shaped as a strongly sclerotized, elongate plate, as a rule with serrate margins and a narrow, longitudinal carina; signum (if present) shaped as a rather small, generally scobinate plate or an indistinctly outlined area with or without a transverse carina.

REMARKS.—Among the Neotropical Tortricidae the species of the genus *Pseudatteria* are the most striking moths, which, with their

bright color and characteristic markings of the wings, might be compared only with the species of the tortricid genera *Atteria* Walker (tribe Anacrusiini) and *Idolatteria* Walsingham (tribe Archipini). The external morphological characters, like the long labial palpi and the vein R_5 of the forewing leading to the wing apex, make the separation of the *Pseudatteria* species from these two genera very easy, and the genitalic characters permit their recognition at once as members of the tribe Polyorthini.

Both male and female genitalia provide the bases for a division of the genus *Pseudatteria* into three subgenera, *Pseudatteria* Walsingham, sensu stricto, *Eurynatteria*, new subgenus, and *Sphaeratteria*, new subgenus, as they are defined in this paper. Only the external morphological characters, common in all three of the above subgenera, restrain the present author from raising them to the generic status.

In respect to the markings of the wings the *Pseudatteria* species might be divided into four groups, independent from the subgeneric division:

1. Markings of forewing consist of more or less broad, black marginal streaks, variously numerous, and perpendicular or slightly oblique to costa and termen; no spots on dorsum; some occasional, scarcely developed spots in internal area of forewing; subcostal area of forewing white, variously broad; apicoterminal portion of forewing also white, very broad; remaining portion of forewing and hindwing orange; latter with some white in cilia only and with black spots on margins; no internal spots on hindwing (*volcanica* Butler; *splendens* Druce; *cladodes* Walsingham; *bradleyi*, new species; *chrysanthema* Meyrick; *igniflora* Meyrick; *shafferi*, new species; *dognini*, new species; *tremewani*, new species; *maenas* Meyrick; and *pseudomaenas*, new species).

2. Black marginal streaks of forewing as in former group, in some species narrower and more numerous; as a rule spots on dorsum present; internal area of forewing generally with very numerous and well-developed spots; white subcostal area of forewing almost as broad as in group 1, or narrower to completely lacking; white apicoterminal area of forewing always narrower or lacking; hindwing with spots on margins and in internal area (*symplocota* Meyrick; *fumipennis* Dognin; *ardoris*, new species; *leopardina* Butler; *marmarantha* Meyrick; *myriocosma* Meyrick; *unciana* Dognin; *pantherina* Felder; *heliocausta* f. *baccheutis* Meyrick). The nominate form of *heliocausta* Dognin shows the characters intermediate between the two groups, having on the forewing no dorsal spots and no or only some occasional, internal spots, and the hindwing well spotted in the internal area.

3. Dark markings of forewing confluent, leaving ground color of

forewing in form of spots; hindwing with internal spots separate or confluent (*dictyanthes* Meyrick; *buckleyi* Druce).

4. Markings of wings greenish blue; costal spots of forewing less numerous than in three preceding groups; two very broad, transverse bands, and a large spot in external portion of forewing; hindwing with internal spots confluent or separate (*cantharopa* Meyrick; *analoga*, new species).

REMARKS.—There are no field or other observations on the living moths of the genus *Pseudatteria*, and no information is yet present about the natural enemies of these insects. Consequently nothing is known about the biological significance of the bright colors of the moths in question, and any treatment of these colors as being sematic would be based merely on pure speculation. Nevertheless, it is important to emphasize that the *Pseudatteria* species have their analogies among Neotropical Lepidoptera belonging to different families. This resemblance is in some cases so deceiving that it may mislead (and already has misled) taxonomists and cause misinterpretations of the systematic position of moths (see Appendix at the end of this paper). If the resemblance of the *Pseudatteria* species to those of two other tortricid genera, *Atteria* and *Idolatteria*, might in some way be explained by the law of homologous series in variation (Vavilov, 1922), this explanation appears hardly applicable to the cases of a remote relationship. For instance, many species of the oecophorid genus *Eumimographa* Dognin have not only the color but also the details of the wing markings of at least three pattern types as they have been observed in the genus *Pseudatteria*. Only the sizes of the moths, shapes of the wings, and other morphological details disclose the different family membership of these species. The zygaenid species *Euclimacia tortricalis* Druce exactly reproduces the color and wing markings of *Pseudatteria volcanica* or some other species of the pattern group 1. The above resemblance is in no way less complete than in the classical examples of mimicry of some South American Rhopalocera. It should be mentioned that the *Pseudatteria* species and their analogues, which belong to other families of the Lepidoptera, inhabit the same localities in many cases.

Chronologically Meyrick (1912) was the first to introduce the generic name *Pseudatteria* in the literature, crediting this name to Walsingham, and writing "*Pseudatteria* Wals. Biol. Centr. Amer. 4 (ined.)." In his catalogue of the Tortricidae, in which the above quotation was published, Meyrick did not establish any new genus, and there is no reason to suppose that he intended to make an exception for *Pseudatteria*. Later, Meyrick ("15th March 1913") gave a description of this genus and named *volcanica* Butler, one of the *Pseudatteria* species of his above catalogue, as its type species. He

again cited Walsingham as the author of the generic name, with the same remark "ined." This repeated citation of *Pseudatteria* as an unpublished name showed clearly that Meyrick did not recognize his paper of 1912 as validating the publication of this genus.

In the meantime, Walsingham (1913) had published his *Pseudatteria* and indicated it as a new genus. He designated the new species *potamites* Walsingham (the only *Pseudatteria* species under this date) as its type species. Walsingham did not mention the publication of the genus *Pseudatteria* by Meyrick (1912), although Walsingham's paper was dated "February, 1913." It is quite clear that the publication of the above three papers, two by Meyrick and one by Walsingham, at almost the same time, gave these authors no chance to quote each other in a proper way. In accordance with this, it would be reasonable to reject the publication of *Pseudatteria* by Meyrick (1912), recognizing it as unavailable because this author himself attributed this name to Walsingham, declared it as being unpublished, and did not mention anywhere that he was introducing this name as a new taxon. For these reasons, the genus *Pseudatteria* should become available with the date of its publication by Walsingham (1913), with *potamites* Walsingham as the type species of this genus. A corresponding proposal to place the generic name *Pseudatteria* Walsingham (type species: *potamites* Walsingham) on the "Official List of Generic Names in Zoology," and the name *Pseudatteria* Meyrick (type species: *volcanica* Butler) on the "Official Index of Rejected and Invalid Generic Names in Zoology," has been submitted by the present author to the International Commission on Zoological Nomenclature. The purpose of this proposal is to legalize the authorship of Walsingham for the genus in question. The decision of the Commission cannot substantially influence the existing designation of the type species of the genus *Pseudatteria* because *volcanica* Butler and *potamites* Walsingham are conspecific.

Key to the *Pseudatteria* Species

1. Forewing with two broad, greenish-blue bands crossing wing transversely from costa to dorsum; a large, concolorous spot distad of these bands . . . 2
Forewing without such bands 3
2. Large, greenish-blue spot in distal third of forewing, extended to costa and touching it **analoga**, new species
Large, greenish-blue spot in distal third of forewing, remote from costa and dorsum **cantharopa** Meyrick
3. Forewing with orange or somewhat yellow spots on dark-blue ground, or with such spots separated from each other by black interspaces 4
Forewing with more or less numerous, black, sometimes slightly prismatic spots and/or streaks on white, orange or somewhat yellow ground . . . 5

4. Hindwing with black spots merely on and near wing margins.
dictyanthes Meyrick
 Hindwing with black spots in central area, in male occupying a large surface and frequently confluent *buckleyi* Druce
5. Both wings densely covered with spots and streaks; confluent, arranged in more or less regular, transverse rows which are smaller and more numerous on forewing *myriocosma* Meyrick
 Forewing with more or less heavy streaks and/or spots on costa, termen, and in some species also on dorsum; hindwing also with spots on margins; if spots also present in central areas of wings, then not very dense and not arranged in transverse rows 6
6. Spots in central areas of wings present, at least on hindwing 7
 No spots in central areas of both wings, or occasional ones on forewing . 15
7. Interspaces between most of broad costal streaks of forewing with narrower and shorter, almost linear streaks *unciana* Dognin
 All of costal streaks of forewing almost equally heavy, none of them linear . 8
8. Interspace between cubital vein of discal cell, vein Cu_2 , and A_1 of hindwing with at least four spots following each other and not overstepping these veins 9
 Interspace below cubital vein of discal cell and vein Cu_2 of hindwing with not more than three spots, all of them overstepping vein A_1 , or no spots in this area 10
9. Costa of forewing with twelve black, moderately broad, at greatest part somewhat crooked streaks, some of them roundly or irregularly dilated toward tips; a straight, narrow, longitudinal streak and below it two transverse streaks forming an 88-shaped figure, all three in subterminal area in front of three central terminal streaks . . . *ardoris*, new species
 Costa of forewing with eleven black, rather broad streaks not dilated at tips, most of them not crooked; in subterminal area of forewing not more than two broad streaks or irregularly shaped spots in front of three central terminal streaks *heliocausta* Dognin
10. Subterminal spots of forewing arranged in a distinctly arcuate, although slightly broken row *leopardina* Butler
 Subterminal spots of forewing not forming any regular row, or missing . . 11
11. Forewing without subterminal spots; upper of terminal streaks reaches imaginary line drawn between penultimate costal streak and tornal spot.
maenas Meyrick
 Subterminal area of forewing with spots and/or streaks; terminal streaks almost equally long among themselves, and upper of them not reaching inwards deeper than others 12
12. Subterminal area of forewing without any longitudinal streaks, only with more or less rotundate, ovate, or irregularly shaped spots 13
 Subterminal area of forewing with spots and at least with one longitudinal streak 14
13. One of submarginal spots of forewing many times larger than others and generally touching some of external costal streaks; most of terminal spots of hindwing confluent *marmarantha* Meyrick
 Subterminal spots of forewing almost equally sized, or some of them only slightly larger than others; terminal spots of hindwing distinctly separated.
pantherina Felder

14. Forewing with more or less large, almost equally sized streaks, following more or less regularly one after another along entire dorsum; subterminal longitudinal streaks of forewing close to terminal spots, and crossing white area not deeply intrusive into orange area. . . **symplacota** Meyrick
Dorsal spots of forewing irregularly distributed along dorsum, and some of them distinctly larger than others; a longitudinal streak, located in orange area of forewing, precedes two irregularly rotund, submarginal spots **fumipennis** Dognin
15. Apical and one or two terminal streaks of forewing forming a fork connected with a longitudinal, subterminal streak crossing entire width of white area. **pseudomaenas**, new species
Furcate spots of forewing formed either by streaks other than above or by same apical and terminal streaks, but then no longitudinal streaks completely crossing subterminal area; or no furcate spots on forewing . . 16
16. Costa of forewing with not more than nine streaks 17
Costa of forewing with more than nine streaks 20
17. Preapical costal streak of forewing not furcate and not connected with apical streak; penultimate costal streak longest of all on forewing. **shafferi**, new species
Two preapical streaks of forewing forming a fork, separate or connected with apical streak 18
18. Preapical and penultimate costal streaks of forewing forming a fork with a long "handle"; obliquely crossing white area and intruding into orange area; tornal spot of forewing connected with trifurcate terminal spot above it; hindwing with a large apical spot and three smaller, separate terminal spots **tremewani**, new species
Apical and two preapical costal streaks of forewing forming a complicate, biradiate fork with secondary, occasionally varicose branches and without a "handle"; hindwing with apical spot and upper of terminal spots connected 19
19. Two central terminal spots of forewing forming a short fork connected with a rather rotundate tornal spot **bradleyi**, new species
Two central terminal spots of forewing forming a fork separated from elongate tornal spot **igniflora** Meyrick
20. Forewing with two terminal spots and these with not more than two terminal points **chrysanthema** Meyrick
Forewing with not less than four terminal spots or with not less than three terminal points of these spots 21
21. Forewing with a fork formed by three lower, adjacent terminal spots. **splendens** Druce
Forewing with a fork formed by two lower, adjacent terminal spots; or forks formed by some other, not adjacent terminal spots; or none of terminal spots furcate 22
22. Only third costal streak before apex of forewing longer than remainder of costal spots **dognini**, new species
Penultimate, occasionally also third of costal streaks before apex of forewing longer than remaining costal spots 23
23. Apical and lower of terminal spots of forewing much broader than a terminal spot between them **cladodes** Walsingham
Terminal spots of forewing almost equally broad among themselves; apical spot of forewing occasionally broader **volcanica** Butler

Subgenus *Pseudatteria* Walsingham, new status

SYNONYMY.—As listed above for the genus.

TYPE SPECIES.—*Pseudatteria potamites* Walsingham, 1913; by monotypy and original designation.

MALE.—Uncus elongate, somewhat scaphoid, at least in apical portion, as a rule with an apical thorn directed ventrad, and generally with a soft papilla ventrad to base of this thorn. Vesica with a large cornutus, and generally with a cuneus composed of minute thorns.

FEMALE.—Antrum well defined, subcylindrical, narrower than sinus vaginalis and adjacent portion of corpus bursae; lateral colliculi generally present. Cervix bursae indicated by a stronger sclerotization and striation.

***Pseudatteria (Pseudatteria) dognini*, new species**

PLATE 1

Antenna brownish black with white annulation. Labial palpus black, at base and inner surface white scaled. Head yellowish white with a black median line dilated into a round, preoccipital spot. Thorax [damaged; probably black, as some scales preserved in posterior portion] yellowish white laterally; tegula black with external fringes yellowish white. Abdomen orange. Forewing orange, in subcostal and apicoterminal areas yellowish white; markings bluish black, arranged as follows: ten costal streaks, some of them penetrating into orange area; penultimate of these streaks (ninth, counting from wing base) much longer than others and spotlike dilated at tip; last (tenth) of costal streaks U-shaped, resting with its branches on costa before wing apex; two similarly shaped streaks, one on wing apex, another on termen above tornus, and a much smaller, rotundate terminal spot between them; a rather large, semirobundate spot on tornus; an 8-shaped spot oblique basad, located on border of white and orange areas, in front of interspace between tornal spot and mentioned U-shaped terminal streak above it; cilia bluish black in front of terminal streaks and spots, and white in interspaces. Length of forewing 14–15 mm. Hindwing orange with black, rotundate marginal spots: a large spot on wing apex, connected by a blackish shadow with two spots, one of them a smaller spot on end of costa, another spot slightly smaller than latter spot and located close to lower portion of apical spot, basad of it; three rather large spots on termen, first of them close to apical spot; a small dot closely following last of terminal spots, and two much smaller, widely remote dots on dorsum; in male a little, additional dot below and slightly basad of lower spots accompanying apical spot; cilia black in front of spots, and orange or whitish in interspaces.

MALE GENITALIA.—Uncus with a narrow stalk ending with a rotundate, flatly calathiform-dilated apex with an acute point directed ventrad and accompanied by a little, haired papilla. Valva subrectangular with external margin rotundate; sacculus slightly dilated at base, and narrowly prolonged along ventral margin (of a folded) valva. Aedeagus rather slender with a slightly curved apical process; cornutus with two basal branches and a small, conical cap on apex; cuneus indiscernible.

FEMALE GENITALIA.—Sinus vaginalis with a trapezoidal lamella antevaginalis. Antrum short, tubular with two slightly arcuate colliculi remote one from another. Cervical portion of corpus bursae with fine, longitudinal striation and a stronger sclerotized, oblique striation probably representing a modified cestum; corpus bursae long and narrow; signum ovate.

TYPES.—Holotype, USNM 67566, male (genitalia on slide 2-Obr., Jan. 22, 1961), Loja vicinity, Loja, Ecuador, 1887 (Dognin Collection), allotype, USNM, female (genitalia on slide 4429, JFGC), El Monje near Loja, Loja, Ecuador, 1893 (Dognin Collection).

REMARKS.—Very similar to *shafferi*, new species, but differs from it in the shapes of the terminal markings and the subterminal spot of the forewing. Also the apical spot and the terminal spots of the hindwing are of different shapes and in *dognini* much larger. The female genitalia of both species differ in the shapes of the lamella antevaginalis, colliculi, striation of the cervix bursae, and the signum.

Besides the types of *dognini*, there is in the U.S. National Museum a female specimen from Loja vicinity, Ecuador (pl. 1, fig. 7), somewhat resembling this species, and differing from it in the details of the wing markings. The costal streaks of the forewing of this specimen are distinctly less oblique than in *dognini*, the penultimate and the last of them are simple, and two separate spots are located internobasad of these streaks and the streak preceding the penultimate one. Also the apical spot of the hindwing is replaced by a group of three separate spots. It is quite possible that this specimen might be a variety of *dognini*, but this cannot be proven presently because the abdomen of the moth is missing.

Pseudatteria (Pseudatteria) shafferi, new species

PLATE 2

FEMALE.—Antenna black with few whitish, scattered scales. Labial palpus black, white on scapus and largest portion of inner surface of second segment. Head [worn] with black face and white scales around it. Thorax blue black with scattered, whitish scales; tegula blue black with cream-yellow emargination. Abdomen orange.

Forewing orange, white in subcostal and apicoterminal areas; markings bluish black, arranged as follows: nine streaks on costa, penultimate of them (eighth, counting from wing base) longest and dilated at tip; a trifurcate streak with short branches resting on wing apex and termen below it; another trifurcate streak with short branches resting on termen above tornus; a semirotundate spot on tornus, on border of white and orange areas: on elongate spot, slightly oblique basad, and located between tornal spot and penultimate costal streak; cilia black in front of streaks, and white in interspaces. Length of forewing 14 mm. Hindwing orange with purple-black spots: a large apical spot, composed of two confluent spots, one at end of costa, another on wing apex; five much smaller spots on termen; cilia black in front of terminal spots, twice checked with white at apical spot, and white in interspaces between apical spot and three following terminal spots; remainder of cilia orange with a black dot on tornus, basad of last terminal spot.

MALE.—Unknown.

FEMALE GENITALIA.—Sinus vaginalis with a subtrapezoidal, somewhat obtusely pointed lamella antevaginalis on middle of caudal margin. Antrum short, tubular with incurved sides, and with broad, curved colliculi touching each other at middle of antrum. Cervical portion of corpus bursae membranous caudally, slightly dilated and covered with a dense, sclerotized, rather disorderly, longitudinal striation at middle, and again narrowed cephalically; cestum indicated by a laterocaudal sclerotization in striated area of cervix bursae; corpus bursae long and narrow; signum with an arcuate, transverse carina dividing it in an open, not well-defined caudal area and a subtriangular cephalic area narrowly extended cephalad.

TYPE.—Holotype, ♀ (genitalia slide 8680), Guainia ("Upper Rio Negro"), Vaupés, Colombia, 800 m. (A. H. Fassl); BM.

REMARKS.—Very similar to *dognini*, new species, and compared with it in the description of the latter. In the female genitalia, *shafferi* is also rather close to *tremewani*, new species, but has no external similarity to it. This species is named for M. Shaffer of the British Museum (Natural History) for recognition of his kind assistance in the preparation of the genitalia slides for the present author's studies on the Neotropical Tortricidae.

Pseudatteria (Pseudatteria) pseudomaenas, new species

PLATE 3

Antenna black with whitish spots on some segments. Labial palpus black with basal segment, and inner surface and dorsal edge

of second segment cream white. Head cream white with a large, black, triangular spot on vertex. Thorax cream white with black spots, one anteriorly, and two posteriorly; tegula black with cream-white emargination. Forewing orange with costal and apicoterminal areas cream white; markings black, arranged as follows: eleven streaks on costa; one streak on apex, successively connected with two terminal streaks below apex and a broader, straight, longitudinal, subterminal streak reaching to imaginary line drawn between third costal streak (counting from wing apex) and upper tornal streak, and thus forming a trivarcate fork with long "handle"; two more terminal streaks below this fork, and two tornal streaks, occasionally connected by their tips; two round or slightly elongate subterminal spots internad of last terminal and upper tornal streaks, connected with themselves and occasionally with mentioned streaks; a minute dot basad or dorsobasad of "handle" of fork; a minute dot dorsad of tip of sixth costal streak (counting from wing apex); cilia black in front of streaks, and white in interspaces. Length of forewing: male 11 mm.; female 14 mm. Hindwing orange with nine black spots on margins; two largest of them on end of costa and wing apex; remaining spots along termen and tornus; interspaces of upper seven of these spots yellowish white; cilia concolorous with spots and interspaces.

MALE GENITALIA.—Uncus with a long stalk ending with a dilated, ovate-calathiform apex bearing a thorn directed ventrad. Valva subrectangular, slightly oblong with external margin rotundate; sacculus slightly dilated at base and narrowly prolonged along ventral margin (of a folded) valva. Aedeagus rather slender with a narrow apical process; cornutus with an apical cap and narrow, basal extension; cuneus indiscernible.

FEMALE GENITALIA.—Sinus vaginalis flatly infundibular; lamella antevaginalis with a rotundate-trapezoidal dilatation at middle. Antrum slightly longer than broad, incurved laterally; two lateral colliculi touching each other at middle of antrum. Cervical portion of corpus bursae striated; no cestum discernible; corpus bursae narrow, moderately long; no signum.

TYPES.—Holotype, ♂ (genitalia slide 8668), and allotype, ♀ (genitalia slide 8669), Costa Rica, April 1924 (Janson); BM.

REMARKS.—This new species is known in two specimens, a male and a female, well matching each other. Very characteristic of the species is a longitudinal streak in the subterminal area of the forewing, looking like a "handle" of a trivarcate fork formed by the apical and two terminal streaks. The species might remind one of *maenas* Meyrick, but in the latter the longitudinal steak is formed by the upper terminal streak, is broader and shorter than in *pseudomaenas*, and

has no fork at the termen. Moreover, *maenas* has only 10 costal streaks of the forewing, and they are somewhat heavier, the external ones distinctly longer, and the internal area of the forewing has many round, rather large, black spots. Also the spots of the hindwing are different in the two species. The lamella antevaginalis of *pseudomaenas* has no sclerotized caudal line, and the striated area of the cervical portion of the corpus bursae and the entire corpus bursae are shorter than in *maenas*.

Pseudatteria (Pseudatteria) maenas Meyrick

PLATE 4

Pseudatteria maenas Meyrick, 1924, Exotic Microlepidoptera, vol. 3, p. 109.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 195; 1958, op. cit., vol. 3, p. 196, pl. 98, figs. 4–4b.

FEMALE GENITALIA.—Sinus vaginalis wide, very flatly infundibular; lamella antevaginalis semicircular with a narrowly sclerotized caudal margin. Antrum as long as broad, deeply incurved laterally; colliculi lateral, rather broad, each with a narrow, strongly sclerotized streak externally. Cervical portion of corpus bursae rather long with longitudinal, slightly undulate striation, laterocaudally with an elongate, strongly sclerotized patch (?cestum); corpus bursae long and narrow; signum indiscernible.

TYPE.—Holotype, ♀ (genitalia slide 4531, JFGC), Chiriqui, Panama, 1899 ("R."); BM.

OTHER SPECIMEN EXAMINED.—♀, Las Lagunas, El Volcan Chiriqui, Panama, Jan. 28, 1948 (R. E. Ellison); BM.

REMARK.—No males are known.

Pseudatteria (Pseudatteria) tremewani, new species

PLATE 5

FEMALE.—Antenna blackish brown. Labial palpus cream yellow; terminal segment and outer surface of second segment blackish brown. Head cream yellow, slightly orange around eyes, and with a black spot between antennae and occiput. Thorax reddish orange; black dots on shoulder of tegula, and an occasional, black spot at middle of thorax. Abdomen reddish orange, occasionally black on tip. Forewing deep reddish orange, in subcostal and apicoterminal areas white; markings black, arranged as follows: nine streaks on costa, smallest of them at wing base, and each following, somewhat longer than preceding one; penultimate and preapical costal streaks (eighth and ninth, counting from wing base) forming a fork with a heavy, oblique "handle" slightly capitate at tip and intruding into orange

area; a rather triangular or somewhat elongate spot at wing apex and apical portion of termen, trivariate or quadrivariate toward them; an elongate spot, bivariate or trivariate externad, located on termen beneath former spot, with lower, internal portion connected with upper portion of a large tornal spot, and thus forming a common tornoterminal spot touching wing margin at three or four points; preapical costal streak, apicoterminal spot, and tornoterminal spot occasionally connected by means of narrow crosspieces; cilia black in front of markings, and white in interspaces. Length of forewing 14–15 mm. Hindwing reddish orange with black spots: a large spot on wing apex, two smaller spots on termen below former spot, and one or two more, smallest, on tornus and dorsum; cilia black in front of spots, white in interspace of apical and upper of terminal spots, sometimes white also in next interspace, and reddish orange in others; some occasional grayish or blackish dots in white or orange interspaces of cilia.

MALE.—Unknown.

FEMALE GENITALIA.—Sinus vaginalis flat with a narrow lamella antevaginalis. Antrum cylindrical, slightly longer than broad; two large, lateral colliculi, each with a longitudinal, strongly sclerotized streak. Cervical portion of corpus bursae with a strong, longitudinal, somewhat disorderly striation; no cestum discernible; corpus bursae long and moderately broad; signum ovate.

TYPES.—Holotype, ♀ (genitalia slide 8678), Cuzco, Peru, January 1901 (Garlepp); BM. Paratypes: ♀, Peru; DEI. 2 ♀♀ (genitalia slide 8677), La Merced ("La Mercedes"), Junin, Peru, 2000–3000 ft. (Walkins); BM. 2 ♀♀ (genitalia slides 8675, 8676), Bolivia (nos. 71078, 13496); BM. 3 ♀♀ (genitalia slides 4439, JFGC, and 8670), Rio Zongo ("Songo"), Bolivia, 750 m. (A. H. Fassl); BM. ♀, same data; USNM. ♀, same data; DEI.

REMARKS.—In the genitalia this new species is rather close to the new species *shafferi* and *dognini* but differs from them in the shape of the colliculi and the striation of the cervical portion of the corpus bursae. Moreover, *tremewani* is completely unlike both of these species in the wing markings. It is more like *chrysanthema* Meyrick, but has the tornoterminal spot never divided, and always separated from the wing margin by several white spaces. The arrangement and the shapes of the spots on the hindwing and the genitalia are quite different in *tremewani* and *chrysanthema*. The species is named for W. G. Tremewan of the British Museum (Natural History) in recognition of his kind assistance in the dissections of moths; also the author is grateful for having his attention drawn to all characters observed as new or rare in the slides, including this new species.

Pseudatteria (Pseudatteria) chrysanthema (Meyrick)

PLATES 6, 7, 41

Atteria chrysanthema Meyrick, 1912, Trans. Ent. Soc. London, for 1911, p. 676.—

Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 88.

Pseudatteria chrysanthema.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytzman, Genera insectorum, fasc. 149, p. 22.—Clarke, 1958, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 3, p. 195, pl. 97, figs. 3–3c.

FEMALE GENITALIA.—Sinus vaginalis wide, flatly infundibular; lamella antevaginalis narrow, obtusely angulate cephalad. Antrum short and almost regularly cylindrical; cervical portion of corpus bursae with fine, sometimes hardly discernible striation; cestum short, occasionally vestigial, generally with a longitudinal carina; corpus bursae long, rather broad; signum scobinate, rather triangular.

TYPES.—Lectotype, female (genitalia on slide 4435, JFGC), "San Augustin," Colombia, 3500 ft., September 1895 ("S."); BM. One lectoparatype, female, Iquitos ("Yquitos"), Loreto, Peru, 1906 ("S."; Meyrick Collection); BM.

OTHER SPECIMENS EXAMINED.—Colombia: ♀, no exact data; DEI. ♀, Bogotá, Cundinamarca (J. G. Foetterle); VMNH. 2 ♀♀, Guainia ("Ober Rio Negro"), Vaupés, 800 m. (A. H. Fassl); BM. Venezuela: 2 ♀♀ (genitalia of one on slide 636-Obr.), no exact data; AMNH. British Guiana: ♀, no locality data, November–December 1902 (C. B. Roberts); BM. ♀, Georgetown, Demerara (Casbell); BM. ♀, Akaima ("Fort Akayma"), Rio Demerara; AMNH. 2 ♀♀, Berbice (Crowley); BM. Ecuador: ♀, no exact data (S. E. Cassino Collection); MCZ. ♀, Zamora, May 1886; USNM. 4 ♀♀, Loja vicinity, Loja, 1883, and 1887; USNM. ♀ (genitalia slide, prepared by A. Busck on Mar. 30, 1926), El Monje near Loja, Loja, 1893 (Dognin); USNM. Peru: ♀, no exact data (M. de Mathan); BM. 2 ♀♀, Cuzco, January 1901 (Garlepp); BM. 5 ♀♀ (genitalia of one on slide 8655), Rio Chanchosmayo ("Chanchamayo"), Cuzco, June–August 1901 (Hofmann), 1898, and 1912 (O. Schuncke); BM. 2 ♀♀, La Merced, Junin (R. Toro), and 1915 ("W."; Meyrick Collection); BM. ♀, Rio Colorado, Junin, 2500 ft., August 1903 (Watkins and Tomlinson); BM. ♀ (genitalia slide 4436, JFGC), Moyobamba, San Martin, "1^{er} Sem." 1887 (M. de Mathan); USNM. ♀, Tarapoto, San Martin, May–August 1885 (M. de Mathan); BM. Bolivia: 6 ♀♀, no exact data (71076, 71077; Rolle Heyne, 13497–13499; Germain); BM. ♀, Rio Zongo ("Songo"), 750 m.; VMNH. ♀ (genitalia slide 67-Obr., 1963), same locality, 2500 ft., 1930 ("Z."); USNM. 2 ♀♀, Chapare, 400 m., July 15, 1948, and Aug. 5, 1950 (R. Zischka); ZSM. ♀, Prov. del Sara, Santa Cruz, 450 m. (J. Steinbach; Meyrick Collection); BM.

♀, Buena Vista, Santa Cruz, 750 m., August 1906 to April 1907 (J. Steinbach); BM. 4 ♀♀, "Yungo del Espiritu Santo," Cochabamba, 1888-1889 (P. Germain); BM. Brazil: ♀, Castro, Parana (E. D. Jones; Meyrick Collection); BM

REMARKS.—The male of *chrysanthema* is not known. The species is very similar to *splendens* Druce and in some specimens hardly distinguishable from it. In *splendens* the external indentation of the subapical terminal spot of the forewing is noticeably deeper than in *chrysanthema* (in which this indentation often is completely lacking), usually being represented by two white notches, at least as deep as the width of the cilia; the spot itself is separated from the tornal spot by a rather broad, white interspace. In *chrysanthema* there is an additional spot between the subapical and the tornal spots of the forewing; the interspace between this additional spot and the tornal spot is very narrow, or both these spots are confluent. The above characters are rather reliable for identification of the specimens with the cilia undamaged, but in those with the cilia broken they may sometimes not be very distinct. On the hindwing of *chrysanthema* the subapical spot is followed by one or two small, black terminal spots which are much smaller than the adjacent spot on the termen. In *splendens* the subapical spot of the hindwing is generally confluent with the apical spot; if both of these spots are separated, the subapical spot is larger than the terminal spot next below. The female genitalia of these two species enable an easy separation of both.

Pseudatteria (Pseudatteria) analoga, new species

PLATE 8

FEMALE.—Antenna brown black with violet gloss. Labial palpus brown black with bluish-violet gloss; basal segment and inner surface and base of upper edge of second segment orange yellow. Head orange yellow; vertex brown black with bluish-violet gloss. Thorax [damaged] concolorous with vertex and with scattered, orange-yellow scales; patagia and fringes of tegula orange yellow. Abdomen prismatic greenish blue. Forewing orange yellow with prismatic greenish blue, fine black-outlined markings, as follows: a broad, transverse, somewhat undulate-outlined band, located in basal third of wing and slightly narrowed costally; a similar, slightly broader band at middle of wing; a large, piriform spot located in external third of wing, narrowly extended costally and reaching costa, and remote from dorsum; two moderately sized spots near base of wing, one on costa, another on dorsum; a minute, costal dot external of these spots, before first band; two moderate, rotundate costal spots, one in interspace of first and second bands, another

between latter band and piriform spot; two minute dorsal dots in same interspaces, each one opposite above-mentioned costal spots; eight variously shaped marginal spots, two of them in external portion of costa, one on wing apex, four on termen (some of them connected by tips), and one (largest spot) on tornus; cilia black in front of marginal markings, and orange yellow in interspaces. Length of forewing 13 mm. Hindwing orange yellow with black markings: large, irregularly shaped spots, confluent and occupying basal two-thirds of wing; a preapical spot on costa; an elongate spot extending from wing apex to upper portion of termen; a similar spot on termen, below former and separate from it; two smaller, rotund spots on tornus, touching external margin of confluent spots in inner area of wing; cilia orange yellow, in front of marginal spots black; at apicoterminal spot black portion of cilia divided by orange yellow.

MALE.—Unknown.

FEMALE GENITALIA.—Sinus vaginalis wide with a narrow lamella antevaginalis. Antrum tubular, broader than long; two narrow, lateral colliculi; cervical portion of corpus bursae finely striated, closer to antrum with numerous, variously sized, flat, sclerotized thorns arranged in form of a girdle; cestum elongate, serrately outlined, with a narrow, stronger sclerotized carina; corpus bursae elongate, moderately broad; signum shaped as a semiroundate plate, perpendicular to surface of corpus bursae, and resting on a weakly sclerotized area.

TYPE.—Holotype, ♀ (genitalia on slide B.6), Rio Tanampaya, La Paz, Bolivia, 1894 (Garlepp; Staudinger Collection); ZMB.

REMARKS.—Similar to *cantharopa* Meyrick, but differs in the shapes of the spots of the wings: the large, external spot of the forewing is extended costad and touches the costa; the marginal spots of both wings are larger and on hindwing less numerous. In accordance with the genitalia, these two species belong to different subgenera. In its appearance *analoga* is very similar to the gynandrous specimen of an unknown *Pseudatteria* species, described by the present author (Obraztsov, 1962). Until any detailed information about the normal moths of this unknown species from Peru and the male of *analoga* is available, it is difficult to discuss their relationship.

Pseudatteria (Pseudatteria) unciana (Dognin)

PLATE 9

Atteria unciana Dognin, 1904, Ann. Soc. Ent. Belgique, vol. 48, p. 133.

Pseudatteria unciana.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytzman, Genera insectorum, fasc. 149, p. 22.

FEMALE GENITALIA.—Sinus vaginalis very flat, rather tureen shaped than infundibular. Antrum broadly cylindrical, slightly

longer than broad; two linear, lateral colliculi; cervical portion of corpus bursae slightly broader than antrum, with striation consisting of fine lines crossing each other; cestum narrow, long, protruding striated area; corpus bursae long, rather narrow; signum rotundate cephalad, opened caudad.

TYPE.—Holotype, ♀ (genitalia slide 4-Obr. Feb. 24, 1961), Zamora, Ecuador, September 1886 (Dognin); USNM.

OTHER SPECIMENS EXAMINED.—Ecuador: 3 ♀♀, Chiguinda (C. Buckley); BM. 3 ♀♀, Intag ("Intaj") (C. Buckley); BM. 2 ♀♀ Baños, 2500 m., June-July 1936 (W. Clarke-Macintyre); VMNH.

REMARKS.—The male of this species is unknown.

Pseudatteria (Pseudatteria) myriocosma Meyrick

PLATE 10

Pseudatteria myriocosma Meyrick, 1930, *Exotic Microlepidoptera*, vol. 3, p. 608.—

Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 212; 1958, *op. cit.*, vol. 3, p. 199, pl. 99, figs. 2-2c.

FEMALE GENITALIA.—Sinus vaginalis wide, infundibular; lamella antevaginalis narrow. Antrum short, cylindrical with lateral colliculi vestigial; cervical portion of corpus bursae densely striated; cestum elongate, hidden in this striation; corpus bursae long and broad; signum with a transverse carina, cephalic portion triangular, serrately outlined, and caudal portion smooth, rotundate, almost obsolete.

TYPE.—Holotype, ♀ (genitalia slide 4426, JFGC), Cochabamba, Bolivia (Paravicini Collection); BM.

OTHER SPECIMEN EXAMINED.—1 ♀, Bolivia (ex Germain; Paravicini Collection); BM.

REMARKS.—Species of an appearance unique for the entire genus. The male is unknown.

Pseudatteria (Pseudatteria) pantherina (Felder)

PLATE 11

Atteria pantherina Felder, 1875, in *Reise der Fregatte Novara*, Zool., vol. 2, pt. 2, p. 3, pl. 139, fig. 41.

Pseudatteria pantherina.—Meyrick, 1912, in *Wagner, Lepidopterorum catalogus*, pt. 10, p. 16; 1913, in *Wytzman, Genera insectorum*, fasc. 149, p. 22.

FEMALE GENITALIA.—Sinus vaginalis wide, rather deeply tureen shaped than infundibular; lamella antevaginalis narrow. Antrum subcylindrical, broader than long with sides slightly incurved; colliculi narrow, lateral, curved as sides of antrum. Cervical portion of corpus bursae finely striated; cestum narrow and long; corpus bursae rather

long and broad; signum with a transverse carina separating a triangular, cephalic area from a flat, open, caudal area.

TYPE.—Holotype, ♀ (genitalia on slide 5773), Bogotá, Cundinamarca, Colombia (Lindig; 400161); BM.

OTHER SPECIMENS EXAMINED.—Colombia: 2 ♀♀, no locality data, 1915 (Meyrick Collection); BM. 1 ♀, Pacho, Cundinamarca, 2200 m. (H. Fassl); BM. 1 ♀, same data; USNM. 2 ♀♀, Bogotá, Cundinamarca (Lindig, Felder Collection, 400162; and Rothschild Collection); BM.

REMARKS.—The shape and size of the spots of the wings are slightly variable. The marginal streaks along the external portion of the costa and termen of the forewing are either separate or connected in pairs. On the hindwing the number of the spots is somewhat inconstant. The male of the species is unknown.

Pseudatteria (Pseudatteria) fumipennis (Dognin)

PLATE 12

Atteria fumipennis Dognin, 1904, Ann. Soc. Ent. Belgique, vol. 48, p. 133.

Pseudatteria fumipennis.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytzman, Genera insectorum, fasc. 149, p. 22.

MALE GENITALIA.—Uncus rather long with a narrow basal stalk and a scaphiform, dilated and rounded apical portion ending with a short, acute point directed ventrad; a little, haired papilla closely approximate to this point, and located basad of it. Valva subrectangular with external margin rounded; sacculus short and rather broad, triangular. Aedeagus thick and stout with a narrow apical projection; vesica finely punctulate; cornutus large, stout with a short, strong, bent hook distally; cuneus shaped as a short, arcuate row of minute spines.

TYPE.—Holotype, ♂ (genitalia slide 3-Obr., Feb. 24, 1961), Micay, Valle del Cauca, Colombia, August 1896 (Dognin Collection); USNM.

REMARK.—The holotype is the only known specimen of the species.

Pseudatteria (Pseudatteria) ardoris, new species

PLATE 13

FEMALE.—Antenna black; scapus with a slight prismatic-blue luster. [Labial palpi missing.] Head dark prismatic blue; white emargination around eyes, dilated at face. Thorax dark prismatic blue; patagia, tegula, and posterior edge of mesothorax with white margins; lateral sides of metathorax with orange-yellow tufts of hairs. Legs black; lower edge of foreleg white; middle and hindlegs with white rings. Abdomen black with yellow rings. Forewing deep reddish orange, at costa and termen white; markings black, formed by numerous spots and streaks with a slight bluish or violet luster, and arranged as

follows: twelve broad, more or less subquadrate spots on costa, most of them continued distad as oblique, irregularly shaped streaks formed by confluence with a longitudinal row of rotundate, subcostal spots, only a few of which remain isolated; wing apex with a short, trifurcate streak fused with an ovate spot located basad; termen with three elongate, nearly 8-shaped, oblique streaks narrower than costal streaks; at tornus two rather large, rotund spots; dorsum with 10 spotlike streaks slightly inclined in different directions and occasionally touching each other with tips; five spots in discal cell, and one externad of it, forming a common, longitudinal row; the outer two more remote from each other and remaining spots of same row; a longitudinal streak being a continuation of this row and located close before upper of terminal streaks; two pairs of round spots beneath this longitudinal streak, one pair below other and before two lower of terminal streaks, and forming an 88-figure; four spots in interspace of veins Cu_1 and Cu_2 ; eight spots in interspace below discal cell and vein Cu_2 ; some minute dots in external wing portion and here and there between large spots; cilia black in front of spots, and white in interspaces. Length of forewing 14 mm. Hindwing concolorous with forewing but without white; at apex two large, rotundate spots touching each other; one subtriangular spot on costa before apex; five moderately sized spots on termen and tornus, and three larger ones on dorsum; two large, round spots forming a row beneath discal cell, and two smaller spots externad of it; two spots in interspace beneath vein Cu_2 , external of these spots smaller; four large, somewhat unequally sized spots in vein interspace next dorsad of this row, and two small spots dorsobasad of basal of these four spots; cilia black or grayish in front of spots, orange or whitish in interspaces.

MALE.—Unknown.

FEMALE GENITALIA.—Sinus vaginalis flatly infundibular; lamella antevaginalis bandlike, narrow at middle, and slightly broader laterally. Antrum cylindrical, slightly longer than broad; colliculi lateral, vestigial; cervical portion of corpus bursae with a tangled striation; cestum rather narrow, elongate, at margins serrate, tapering cephalad, and divided by a narrow, mediolongitudinal carina; corpus bursae rather long and moderately broad; signum shaped as a smooth, elongate area, at middle with a transverse, stronger sclerotized fold.

TYPE.—Holotype, ♀ (genitalia on slide 8659), Marcapata, Peru, 4500 ft. (Rothschild Bequest); BM.

REMARKS.—Similar to *fumipennis* Dognin but differs from this species in some details of the wing markings. The costal streaks of the forewing are inclined distad, while in *fumipennis* their tips are turned sharply basad. The dorsal streaks of the forewing are more numerous and shaped quite differently from *fumipennis*. This also

concerns the spots of the internal portion of the forewing, which in the new species are arranged in distinctly longitudinal rows; in *fumipennis* these spots are less numerous, and their arrangement is more disorderly. The markings of the hindwing are quite different in the two species. In consequence of so many essential differences in the wing markings, it is difficult to assume that *fumipennis* and *ardoris* might belong together as two sexes of one species. Moreover, the types of both of them originate from localities rather remote one from the other. The new species also has some resemblance to *symplacota* Meyrick, but differs from the latter in the number and size of the wing spots, and has distinct genitalic structures requiring the placement of these two species in separate subgenera.

Pseudatteria (Pseudatteria) cladodes Walsingham

FIGURE 8; PLATE 14

Pseudatteria cladodes Walsingham, 1914, Biologia Centrali-Americana, Lepidoptera Heterocera, vol. 4, p. 269, pl. 8, fig. 6.

MALE GENITALIA.—Uncus rather narrow, slightly and gradually dilated toward rotundate apex with a minute, acute point, and on ventral surface with a little, haired papilla. Valva broadly subovate with external margin rounded; costa slightly sclerotized; sacculus slightly dilated at base and narrowly extended along entire ventral margin of valva. Aedeagus moderately long and thick, with a narrow distal process slightly dilated before tip, with spinulation laterobasad of this process, and more basad with a long, ventral keel directed basad and pointed at tip; cornutus large, transverse-subovate with a thick, obtuse, cuculliform distal process; a long, loop-shaped cuneus of numerous little spines, multiordinal in basal portion of loop, behind its middle, and on end, and uniordinal in intermediate portions.

FEMALE GENITALIA.—Sinus vaginalis flatly infundibular with a moderately broad lamella antevaginalis. Antrum tubular, slightly elongate, narrower than adjacent portion of cervical portion of corpus bursae; two lateral colliculi, one on each insignificantly incurved side of antrum. Cervix bursae striated, more densely caudad, with a strong lateral sclerotization; cestum long, narrow, tapering cephalad, surrounded by a weaker sclerotized, serrately outlined area. Corpus bursae moderately broad; signum indiscernible.

TYPE.—Holotype, female (genitalia on slide 5768), "Central America" (O. Salvin; Felder Collection; 400153); BM.

OTHER SPECIMENS EXAMINED.—♂ (without abdomen), paratype, Peru (Saunders Collection; 94-68); ♂ (genitalia slide 6615), Peru (Saunders; 401232); BM.

REMARKS.—The label of the holotype of *cladodes* reads "Central America," and Walsingham (1914) supposed that the specimen might

originate from Panama. Of the specimens examined by the present author, two others are labeled as originating from Peru. It seems therefore quite probable that some confusion has occurred in the labeling of the Walsingham specimen. Future records perhaps will bring more clarity to this problem.

Superficially *cladodes* might easily be mistaken for some form of the highly variable *volcanica* Butler; however, *cladodes* has 10 costal streaks of the forewing instead of 11 streaks as in *volcanica*, and there is a distinction in the genitalia of these two species. The male of *cladodes* has the uncus less narrowed basad, the valva is somewhat shorter and therefore looks relatively broader, the aedeagus has a ventral keel, and the cornutus and the cuneus are shaped differently. The female genitalia are rather similar in both *cladodes* and *volcanica*, but the antrum of the first species is less incurved laterally, and the signum is not discernible.

Pseudatteria (Pseudatteria) leopardina (Butler)

PLATES 15, 16

Atteria leopardina Butler, 1872, Cistula Ent., vol. 1, p. 89; 1874, Lepidoptera Exotica, p. 178, pl. 61, fig. 5.

Pseudatteria leopardina.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytzman, Genera insectorum, fasc. 149, p. 22.—Walsingham, 1914, Biologia Centrali-Americana, Lepidoptera Heterocera, vol. 4, p. 269, pl. 8, fig. 7.

MALE GENITALIA.—Uncus scaphiform-spatulate, dilated and rounded apically, at tip with a short, acute point directed ventrad, and a minute, setose papilla beneath this point. Valva subrectangular with a rounded external margin; sacculus dilated at base, and then narrowly extended along ventral margin of valva, not reaching external angle. Aedeagus thick but not stout, with a slight "waist" at middle, and a robust distal process; cornutus elongate with two apical points; no cuneus.

FEMALE GENITALIA.—Sinus vaginalis flatly infundibular; lamella antevaginalis narrow. Antrum tubular with two broad, lateral colliculi, one on each side; cervical portion of corpus bursae marinate; cestum indiscernible; corpus bursae rather broad; signum divided by a transverse carina in two unequal portions, caudal one larger.

TYPE.—Holotype, female (genitalia on slide 5766), Costa Rica (75-17); BM.

OTHER SPECIMENS EXAMINED.—Costa Rica: ♀ (abdomen missing), no exact locality data; AMNH. ♀, same; USNM. 5 ♀♀, same (A. G. M. Gillot; Adams; Underwood); BM. ♂ (genitalia on slide, prepared by A. Busck on Sep. 28, 1920), and 2 ♀♀, Volcán de Poás,

Alajuela (W. Schaus); USNM. ♀, Rio Sixaola ("Saxola River"), Limón (W. Schaus); USNM. 2 ♀♀, Cachi ("Cache") district, Cartago; BM. 2 ♀♀, La Estrella, Cartago, July 1925, July 22, 1925; BM. ♂, and 7 ♀♀ (genitalia of one on slide, prepared by A. Busck on Mar. 20, 1926), Tuis, Cartago, 2400 ft.; 4000 ft., Sep. 2, 1908; and 5800 ft., Aug. 31, 1908 (W. Schaus); USNM. ♀, same locality, 6000 ft., Aug. 1888 ("A.B."; Meyrick Collection); BM. 7 ♀♀ (genitalia of one on slide 6610), Volcán de Irazú, Cartago, 6000–7000 ft., no date, and 1915 (H. Rogers; nos. 66261 and 66262 among others); BM. ♀, Tres Ríos, Cartago, 5000 ft., December 1906 (W. Schaus); USNM. ♀, same data (W. Schaus; 5971); BM. 4 ♀♀, Orosi, Cartago, 1200 m. (A. H. Fassl); BM. ♀, same data; USNM. 2 ♀♀, Rio Sucio ("Susio"), San José (H. Rogers; 66262, 66265); BM. ♀, same data (H. Rogers; 66264); USNM. ♀, "San Gerónimo,"³ 1910 (W. Schaus); USNM. 5 ♀♀, Montes del Aguacate ("Mt. Aquacate") (Underwood; Rothschild Collection); BM. ♂ (genitalia on slide 8654), and ♀, Rio Cascajal ("Coscajal"), May 1919; BM. Panama: ♂ (genitalia slide 8656), and 8 ♀♀, Volcán de Chiriqui; no additional data (Rothschild Collection); 4000–6000 ft. (G. C. Champion; 66267–66269); 1899, 1915 (Meyrick Collection); BM. ♀, Bugaba, Chiriqui, 800–1500 ft. (G. C. Champion; 66266); BM. 3 ♀♀, Las Lagunas, Volcán de Chiriqui, Jan. 15, and 28, 1948 (R. E. Ellison); BM.

REMARKS.—An easily recognizable species. The variation is quite insignificant and consists of a slight change in the size and shape of separate spots. The terminal streaks of the forewing may be separate or fused in both sexes. On plate 15, figure 2, which shows the caudocephalic aspect of the male genitalia, the aedeagus is slightly misshaped because of the pressure of the cover-glass, and the "waist" of the aedeagus is barely seen.

Pseudatteria (Pseudatteria) marmarantha Meyrick

FIGURE 9; PLATES 17, 18

Pseudatteria marmarantha Meyrick, 1924, *Exotic Microlepidoptera*, vol. 3, p. 109.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 197; 1958, *ibid*, vol. 3, p. 199, pl. 99, figs. 1–1b.

MALE GENITALIA.—Uncus with a long, narrow stalk, and a rotundate, cupuliform apex ending with an acute spine directed ventrad. Valva broadly subovate; sacculus dilated at base. Aedeagus moderately thick with a narrow, spoonlike distal process; cornutus elongate.

³ There are two places with this name in Costa Rica: one at San Miguel, the other at Cañas.

gate, rather narrow with a pointed apical cap; cuneus composed of about 15 variously sized spines.

FEMALE GENITALIA.—Sinus vaginalis flatly infundibular; lamella antevaginalis moderately broad. Antrum rather short, tubular with two crescent, medially dilated, lateral colliculi; cervical portion of corpus bursae with narrow, parallel wrinkles V-shaped; caudal section of this portion with two lateral, sclerotized, tuberculate projections; cestum shaped as a long, narrow, longitudinally carinate plate of somewhat variable length. Corpus bursae moderately broad, slightly dilated caudad of middle portion; signum shaped as a moderate, transversely carinate plate slightly projected cephalad, or missing.

TYPES.—Lectotype, ♀ (genitalia slide 4414, JFGC), Rio Cauca, Colombia; BM. Lectoparatypes: 5 ♀♀, same locality, 1915; BM. ♀, same data; USNM.

OTHER SPECIMENS EXAMINED.—Colombia: ♀, 1912 (Meyrick Collection); BM. 3 ♀♀, no data (A. H. Fassl); USNM. 5 ♀♀, Rio Aguacatal, Cordillera Central, 2000 m. (A. H. Fassl); BM. ♀ Manizales, Caldas (A. M. Patino); BM. ♀ (genitalia slide 8687), Muzo, Boyaca, 400–800 m. (A. H. Fassl); BM. 2 ♀, “Corinto,” Valle del Cauca, May–July; BM. ♀, “Quilichaya,” Valle del Cauca, 6000 ft., March 1907 (Walsingham 6532); BM. ♀ (genitalia slide 4415, JFGC), Las Juntas (“Yuntas”) near Cali, Valle del Cauca (Dognin Collection); USNM. ♀ (genitalia on slide 6611), 2 ♀♀, Cañon del Monte Tolima, Valle del Cauca, 4700 m. (A. H. Fassl); BM.

REMARKS.—The wing spots are somewhat variable in the size, shape, and number, but this changes very little the general appearance of the species, which is easily recognizable because of the very characteristic markings of the wings. The spots in the subterminal area of the forewing have a tendency to become confluent with the terminal streaks. On the hindwing there are generally no spots in the interior area of the wing, but in some specimens these spots are even more numerous than in the male specimen figured in the present paper.

Pseudatteria (Pseudatteria) splendens (Druce)

FIGURE 10; PLATES 19–21, 41

Atteria splendens Druce, 1901, Ann. Mag. Nat. Hist., ser. 7, vol. 7, p. 440.

Atteria flabellata Meyrick, 1912, Trans. Ent. Soc. London, for 1911, p. 676.—

Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 142.

Pseudatteria splendens.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, pl 16; 1913, in Wytsman, Genera insectorum, fasc. 149, p. 22.—

Clarke, 1958, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 3, p. 200, pl. 100, figs. 1–1e.

Pseudatteria flabellata.—Meyrick, 1912, in Wagner, *Lepidopterorum catalogus*, pt. 10, p. 16; 1913, in Wytsman, *Genera insectorum*, fasc. 149, p. 22, pl. 2, fig. 25; pl. 5, fig. 77.

MALE GENITALIA.—Uncus slender, scaphiform-spatulate, narrow at base and moderately dilated apically; tip rotundate with a small, setose papilla on ventral surface. Valva elongate, subrectangular with external margin broadly rounded; costa sclerotized at base; sacculus dilated at base, and narrowly extended along entire ventral margin of valva. Aedeagus moderately long and thick, with a narrow, spatulate, distal process, and with a spinulate area latero-distally; cornutus elongate, rather thick, bifurcate on tip, at base slightly dilated and laterally compressed; cuneus shaped as a long, curved chain of small spines, somewhat clustered disorderly in basal portion of chain, then uniordinally following one after another, and multiordinal in distal portion.

FEMALE GENITALIA.—Sinus vaginalis infundibular with a moderately broad lamella antevaginalis. Antrum tubular, slightly elongate, narrower than adjacent portion of cervix bursae; two lateral colliculi: cervical portion of corpus bursae striated, more densely caudally, and stronger sclerotized at right side; cestum long, rather narrow, tapering cephalad, and surrounded by a weaker sclerotized, serrately outlined area; corpus bursae long, moderately broad; signum elongate-scapoid with scobination stronger laterad.

TYPES.—Lectotype of *splendens*, ♀ (genitalia on slide 4425, JFGC), Sarayacu, Napo Pastaza, Ecuador (C. Buckley); BM. Holotype of *flabellata*, ♀ (genitalia on slide 4423, JFGC), Ecuador, 1906 ("B."); BM.

OTHER SPECIMENS EXAMINED.—Colombia: ♀, no exact locality data; DEI. ♀, Florida, Rio Putumayo, April 1932 (G. Klug); BM. Ecuador: ♀, no exact locality data (Meyrick collection); BM. ♀ (genitalia on slide 66—Obr., 1963), no exact locality data (J. Arp); USMN. ♂ (genitalia on slide 6612), and 2 ♀♀, Sarayacu, Napo Pastaza (C. Buckley); BM. ♂, same data; USNM. Peru: ♀, Yurimaguas, Loreto (Parish; Meyrick Collection); BM. ♀, same locality; DEI. 2 ♀♀, Chambireyacú near Yurimaguas, Rio Huallaga, June–August 1885 (M. de Mathan); BM. ♂, Iquitos (Yquitos), Loreto, May 1932 (G. Klug); BM. 3 ♀♀, Rio Marañon, Loreto, 1913 (Meyrick Collection); BM. ♀, Rio Napo, Loreto, 1913 (Meyrick Collection); BM. ♂, Pebas, Loreto, "fin X^{bre} & 1^{er} Tr. 1880" (M. de Mathan); BM. Brazil: ♀, São Paulo de Olivença ("Sao Paulo de Olivina"), Amazonas; VMNH. 2 ♀♀ (genitalia of one, slide 8681), Alcobaga, Rio Tocantins, Pará, April (A. H. Fassel); BM. 2 ♀♀, same data; USNM.

REMARKS.—A rather variable species, most similar to *chrysanthema* Meyrick, *igniflora* Meyrick, and the new species *tremewani* and *bradleyi* in the markings of the forewing. To judge from the examined materials, the most constant external character of *splendens* consists of two costal streaks in the outer half of the forewing (the third and the fourth streaks, counting from the wing apex). These streaks are always joined together with their tips, forming a figure similar to the inverted Greek letters π or γ ; in a few cases this union is incomplete, but even then the tips of the above streaks are closely approximate to each other. This feature appears to be helpful for separation of *splendens* from most of the above-mentioned species, but it is insufficient for a separation of *splendens* and *chrysanthema* because of a similar arrangement of costal streaks in these two species. Nevertheless an experienced eye can find some distinction in the shape and arrangement of the terminal and tornal markings of the forewing, also in the markings of the hindwing of *splendens* and *chrysanthema*, but in dubious cases only the examination of the genitalia can be reliable.

The variation of the species shows itself in the additional development of some elements of the wing pattern, as well as in their reduction and/or division into smaller portions. Most striking are the two females from Brazil (pl. 41, figs. 5 and 6) which give the impression of being some separate species. A genitalic examination has proven their identity with *splendens*.

Pseudatteria (Pseudatteria) volcanica (Butler)

FIGURE 11; PLATES 22–27, 41

A comparative study and the genitalic examination of the five forms (*volcanica* Butler, *mimica* Felder, *rivularis* Butler, *potamites* Walsingham, and *geminipuncta* Walsingham), described as separate species, give good reasons to consider them as being conspecific. On the basis of the superficial characters it becomes possible nevertheless to treat the specimens from South America and those from Central America as two separate subspecies, rather distinctly differentiated from each other. In some individuals this difference is seen perhaps less clearly than in others, but in general the separation of the two subspecies is not difficult.

MALE GENITALIA.—Uncus elongate-scapiform, gradually dilated from a short stalk toward a rotundate tip ending with a little, acute point directed ventrad and accompanied by a small, setose papilla located basad of it. Valva elongate-ovate with external margin rounded; costa narrow, sclerotized; sacculus slightly thickened at base, and narrowly extended at least to middle of ventral edge of valva. Aedeagus moderately long and thick, with a narrow, slightly

undulate distal process tapering apicad; cornutus elongate, rather broad, ending with a distal cap with base much longer than height of cap and produced more to one side; a long, cordlike cuneus somewhat twisted in basal portion, and composed of numerous, minute thorns.

FEMALE GENITALIA.—Sinus vaginalis rather flatly infundibular with a narrow, transverse lamella antevaginalis. Antrum slightly sclerotized, subcylindrical, somewhat incurved laterally, about two times as long as broad; two arcuate, lateral colliculi, one on each side of antrum; cervical portion of corpus bursae longitudinally striated; cestum moderately long with a narrow, elevated, longitudinal carina and a serrately outlined area around it; corpus bursae elongate, rather broad; signum with a transverse carina separating a smooth, rotundate, caudal area from an angulate, cephalic area.

Pseudatteria (Pseudatteria) volcanica volcanica (Butler), new status

PLATES 22, 23, 41

Atteria volcanica Butler, 1872, *Cistula* Ent., vol. 1, p. 90; 1874, *Lepidoptera Exotica*, p. 178, pl. 61, fig. 4.

Atteria mimica Felder, 1875, in *Reise der Fregatte Novara*, Zool., vol. 2, pt. 2, p. 3, pl. 139, fig. 42. [New synonymy.]

Pseudatteria volcanica.—Meyrick, 1912, in Wagner, *Lepidopterorum catalogus*, pt. 10, p. 16; 1913, in Wytzman, *Genera insectorum*, fasc. 149, p. 22.—Walsingham, 1914, *Biologia Centrali-Americana*, *Lepidoptera Heterocera*, vol. 4, p. 269.

Pseudatteria mimica.—Meyrick, 1912, op. cit., pt. 10, p. 16; 1913, op. cit., fasc. 149, p. 22.

Marginal streaks of forewing distinctly broader than white interspaces between them; penultimate costal streak reaches imaginary line drawn between tips of fourth costal streak (counting from wing apex) and upper tornal streak; orange area not or slightly distributed externad of this line. Apical spots of hindwing confluent into a large patch.

Types.—Holotype of *volcanica*, ♀ (genitalia slide 4409, JFGC), New Granada (14–17; according to original description: E. W. Janson); BM. Holotype of *mimica*, ♀ (genitalia slide 4411, JFGC), Bogotá, Colombia (Lindig; Felder Collection; 400163); BM.

OTHER SPECIMENS EXAMINED.—Colombia: ♀, Medellín, Antioquía (Gallego M.); USNM. 2 ♂♂ (genitalia of one, slide 8673), and 11 ♀♀ (genitalia of one, slide 8674), Cananche, Cundinamarca, "1^{er} Sem." 1900, July–August 1903 (M. de Mathan); BM. 3 ♀♀, Bogota, Cundinamarca; BM. 5 ♀♀, Muzo, Boyacá, July–August 1903 (M. de Mathan), 400–800 m. (H. Fassl); BM. 3 ♀♀, same locality, Jan. 20 (Dognin Collection); USNM. 2 ♀♀, Villavicencio, Amazonas (Dognin

Collection); USNM. Peru: ♀, Oxapampa, Pasco, 2000 m. (Dognin Collection); USNM.

REMARKS.—The difference between the type specimens of *volcanica* Butler and *mimica* Felder is very minimal and merely consists of the confluence of three terminal streaks of the forewing and a somewhat distinct shape of the apical patch of the hindwing in *mimica*. These characters are rather inconstant and vary from specimen to specimen. In general, the subspecies *volcanica* seems to be less variable than the subspecies *rivularis*, and no forms with the streaks of the forewing widely reduced or confluent as described in the latter subspecies are known for the subspecies *volcanica*.

Pseudatteria (Pseudatteria) volcanica rivularis (Butler), new status

FIGURE 11; PLATES 24–27

Atteria rivularis Butler, 1875, Ann. Mag. Nat. Hist., ser. 4, vol. 15, p. 342.

Pseudatteria rivularis.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytzman, Genera insectorum, fasc. 149, p. 22.—Walsingham, 1914, Biologia Centrali-Americana, Lepidoptera Heterocera, vol. 4, p. 269, pl. 8, fig. 3.—Buseck, 1931, Bull. Brooklyn Ent. Soc., vol. 26, p. 210, pl. 11, fig. 15.

Pseudatteria potamites Walsingham, 1913, Biologia Centrali-Americana, Lepidoptera Heterocera, vol. 4, p. 214; 1914, op. cit., vol. 4, p. 267, 268, pl. 8, fig. 4. [New synonymy.]

Pseudatteria geminipuncta Walsingham, 1914, op. cit., vol. 4, p. 268, pl. 8, fig. 5. [New synonymy.]

Marginal streaks of forewing narrow, generally almost as broad as white interspaces between them, or slightly broader; penultimate costal streak not reaching imaginary line drawn between tips of fourth costal streak (counting from wing apex) and upper tornal streak; orange area distributed rather far externad of this line. Apical spots of hindwing more or less separate from each other.

TYPES.—*P. rivularis*: Lectotype, ♀ (genitalia slide 4410, JFGC), Veraguas ("Veragua"), Panama ("75–28"); ♀ lectoparatype, same locality ("75–28"); BM. *P. potamites*: Lectotype, ♂ (genitalia slide 4407, JFGC), Jalapa, Veracruz, Mexico, 4500 ft., 1887 (W. Schaus; 4601); lectallotype, female (genitalia slide 4408, JFGC), same data (4602); BM. ♀ lectoparatype, same locality (5964); USNM. ♀ lectoparatype, Orizaba, Veracruz, Mexico (W. Schaus; 5963); BM. One female lectoparatype, same locality, February 1908 (R. Muller); USNM. One female lectoparatype, Misantla, Veracruz, Mexico (W. Schaus; 5965); ♀ lectoparatype, El Zapote, Escuintla, Guatemala (G. C. Champion; 66229); USNM. ♀ lectoparatype, Juan Viñas, Cartago, Costa Rica, 2500–3500 ft., November 1906 (W. Schaus; 5968); BM. *P. geminipuncta*: Holotype,

♀ (genitalia slide 5772), Panama (Saunders Collection; "94-68"); BM.

OTHER SPECIMENS EXAMINED.—Central America: ♀ (Felder Collection; 400152); BM. Mexico: ♂, no locality data; USNM. ♂ (genitalia on slide 8671), and ♀ (W. Schaus, and Paravicini Collection); BM. 3 ♀♀ (genitalia of one, slide 8672), Jalapa, Veracruz (Höge; 66227), and 4500 ft., 1887 (G. C. Champion; 4603, 4604); BM. ♂ (genitalia of one, slide 4412, JFGC), and 7 ♀♀ (genitalia of one, slide 4413, JFGC), same locality; USNM. 2 ♂♂ (genitalia of one on slide, prepared by A. Busck on Sept. 4, 1919), Orizaba, Veracruz (W. Schaus); USNM. ♀, Misantla, Veracruz (M. Trujillo; 66228); BM. ♀, Coatepec, Veracruz (Brooks; 66226); BM. ♂ (genitalia slide 6617), San Andrés Tuxtla ("S. Andres"), Veracruz, April 1914; BM. ♀ (genitalia slide 4408, JFGC), Veracruz, 1887 (W. Schaus; only the slide located); USNM. Guatemala: 4 ♀♀, no locality data; USNM. ♀, no locality data, 1930 (Meyrick Collection); BM. ♀, "Vera Paz," 1915 ("C.C."); BM. 3 ♂♂ (genitalia of one on slide, prepared by A. Busck on Dec. 4, 1928), and 4 ♀♀ "Cayuga," Mar., May, Sept., and Oct. (Schaus and Barnes Collection); USNM. ♀ (genitalia on slide, prepared by A. Busck on Mar. 11, 1926), Tactic, Alta Verapaz, July (Schaus and Barnes Collection); USNM. 3 ♀♀ Gubilquitz, Alta Verapaz, 1050 ft., 1880 (G. C. Champion; 66235, 66236, 66241); BM. ♂ (genitalia slide 6616), and ♀, Senahú, Alta Verapaz, 2800 ft., November 1879 (G. C. Champion); BM. ♂, Panzós, Alto Verapaz (G. C. Champion; 66240); BM. ♀ (abdomen missing), Tucurú, Alta Verapaz, May 1917; BM. 4 ♀♀, Purulá, Baja Verapaz (Schaus and Barnes Collection); USNM. ♀, same locality (G. C. Champion; 66232); BM. ♂ (genitalia on slide, prepared by A. Busck on Feb. 14, 1929), and 4 ♀♀, Volcán de Santa Maria, Quezaltenango, Apr., June, and Oct. (Schaus and Barnes collection); USNM. ♀, Las Mercedes, Quezaltenango, 3000 ft., 1881 (G. C. Champion); USNM. ♀, same data (G. C. Champion; 66242); BM. ♀, El Tumbador ("El Zumbador"), San Marcos, 2500 ft. (G. C. Champion; 66238); BM. ♀, San Isidro, Suchitepéquez, 1600 ft., 1880 (G. C. Champion; 66239); BM. 2 ♀♀, Capetillo, Sacatepéquez (G. C. Champion; 66233, 66234); BM. 7 ♀♀, El Zapote, Escuintla, 2000 ft., 1879 (G. C. Champion; Walsingham, and Meyrick Collections; among them nos. 66230, and 66231); BM. ♀, Palín, Escuintla, July (Schaus and Barnes Collection); USNM. British Honduras: ♀, no locality data; BM. ♀, Rio Grande, 1932 (J. J. White); BM. 2 ♀♀, Rio Sarstun ("Sarstoon") (Blancanen; 66243, 66244); BM. Honduras: ♀, no locality data (J. Lienhart; Meyrick Collection); BM. ♀, "La Cambre" (= ?La Cumbre), 3000 ft., June 1922 (J. Lienhart; Meyrick Collection); BM. 4 ♀♀, San Pedro Sula, Cortés,

1896 (E. Wittkugel), and 4200 ft., June 1922 (J. Lienhart; Meyrick Collection); BM. Nicaragua: ♀ (genitalia slide 705-Obr.), "Western Nicaragua," March ?, 1917; AMNH. ♂ (genitalia slide 635-Obr.), Matagalpa, June 28, 1953; AMNH. ♀, "Concordia Cafétal," Jinotega, 4400 ft., March 1906 (M. G. Palmer); BM. Costa Rica: 11 ♀♀ (two of them without abdomina), no locality data (Underwood; A. G. M. Gillott), and ".15" (V. P.; Meyrick Collection); BM. ♀, Rio Cascajal, Alahuela, January 1924 (Janson); BM. ♀ (abdomen missing), Rio Reventazón, March 1923; BM. ♂ (genitalia on slide 6618), Volcán de Irazú, Cartago, 6000-7000 ft., (Rogers; 66260); BM. 2 ♀♀, Orosi, Cartago, 1200 ft. (A. H. Fassl); BM. 3 ♀♀, Juan Viñas, Cartago; no date; 4000 ft., Aug. 24, 1908; and 2500-3500 feet, November 1906 (W. Schaus); USNM. 16 ♀♀, Cachi, Cartago (H. Rogers; 66245-66250, 66252-66258, and others); BM. 4 ♀♀, same locality (W. Schaus; H. Rogers); USNM. 9 ♀♀ (genitalia of one on slide prepared by A. Busck on Mar. 10, 1926), Tuis, Cartago; no date; 2400 ft.; and 2400 ft., July 1907 (W. Schaus); USNM. 2 ♀♀, "La Florida" (= ? La Flor, Cartago), 5000 ft. (W. Schaus); USNM. Panama: ♀, no locality data (Saunders Collection); BM.⁴ ♂ "Cerro Campana," Dec. 29, 1946 (R. E. Ellison); BM.

REMARKS.—The nominate form of this subspecies has the apical streak of the forewing continued to the upper of the tornal streaks and connected to it. The specimens without this connection received the name *potamites* Walsingham. They have the terminal streaks of the forewing narrow, and some rotundate spots located internad of streaks. The name *geminipucta* Walsingham was given to an undoubtedly aberrative, narrow-winged female specimen representing an extreme of the form *potamites*. All these forms intergrade with each other, and thus hardly deserve separate names. Even Walsingham himself, the author of *potamites*, was probably not quite certain of the characters distinguishing it, and identified some paratypes of this "species" in the collection of the U.S. National Museum (nos. 5962, 5964, and 66229) as being *rivularis*. The photographs in the present paper give an idea of the variation of the subspecies in Central America and, besides the intergrading specimens, also include some forms slightly deviating from the average limits of this variation.

Pseudatteria (Pseudatteria) bradleyi, new species

PLATE 28

FEMALE.—Antenna black with scattered, whitish scales on scapus. Labial palpus black with cream-white color starting at base laterally

⁴ One other female specimen in the British Museum (Natural History), labeled "Panama Crowley," belongs to the subspecies *volcanica* and probably originates from South America.

and turning on inner surface to middle of second segment. Head cream white with a median, black stripe expanded on vertex. Thorax black with some cream-white spots posteriorly and laterally; patagia cream white, black at middle; tegula black, along external margin and on apex cream white. Abdomen orange. Forewing deep reddish orange, in subcostal area and external third of wing cream white; blue-black markings: nine costal streaks; two external streaks confluent with themselves and a long, apical streak, forming a trifurcate spot; a large, bifurcate spot on termen, confluent with a rotundate, tornal spot; a separate, rotundate spot at border of orange and cream-white areas between tornal spot and seventh costal streak (counting from wing base); cilia concolorous with marginal markings, blue black in front of spots touching termen, and cream white in interspaces. Length of forewing 14 mm. Hindwing deep reddish orange with violet-black marginal spots: a large spot at wing apex, confluent with a smaller terminal spot beneath; two smaller, separate spots at tornus; cilia cream white at apex, between apical and terminal spots, and between terminal and tornal spots; in front of spots cilia concolorous with them, in remaining portions orange.

MALE.—Unknown.

FEMALE GENITALIA.—Sinus vaginalis rotundate-infundibular with lamella antevaginalis laterally dilated, at middle narrowed for a short distance. Antrum widely tubular, slightly narrowed caudally, and with cephalic margin scalloped; two narrow, lateral colliculi; cervical portion of corpus bursae striated, with a dense sclerotization near linear cestum, latter slightly protruding this sclerotized area; corpus bursae moderately broad; signum with an arcuate, transverse carina, a weakly sclerotized area caudally, and a serrate, triangular area cephalically.

TYPE.—Holotype, ♀ (genitalia slide S679), Las Yungas, La Paz, Bolivia, 1000 m., Oct. 29, 1908 (Seebold; 16476); BM. The exact date and the altitude were established on the basis of information by H. Rebel, found in the catalogue of the Walsingham Collection.

REMARKS.—Very similar in the markings of the wings to *igniflora* Meyrick. Differs from this slightly variable species in having some scattered, whitish scales on the scapus of the antenna, the inner surface of the second segment of the labial palpus cream white only to its middle, the patagia interrupted at the middle by black, the terminal and the tornal spots of the forewing connate, the latter spot rotundate, the apical spot of the hindwing smaller, and the genitalia distinct in their details. The genitalic differences consist mainly of the sinus vaginalis being less wide and more rotundate, the narrow middle portion of the lamella antevaginalis much shorter, the antrum somewhat longer and slightly narrowed caudally, its cephalic margin being dis-

tinely scalloped, both of the colliculi narrow, and the signum shaped differently. The cestum is similar to that in *igniflora*, but does not reach as far cephalad, being almost hidden in the sclerotization of the cervix portion of the bursa copulatrix. This sclerotization is distinctly striated in the new species; in *igniflora* it is rather marmorated.

The species is named for J. D. Bradley of the British Museum (Natural History), whose kind assistance and steady attention to the present author's research have contributed much to the completeness of the present paper.

Pseudatteria (Pseudatteria) igniflora Meyrick

PLATES 29, 30

Pseudatteria igniflora Meyrick, 1930, Exotic Microlepidoptera, vol. 3, p. 606.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 167; 1958, op. cit., vol. 3, p. 196, pl. 98, figs. 3–3c.

FEMALE GENITALIA.—Sinus vaginalis very flatly infundibular with lamella antevaginalis narrow at middle and dilated laterally. Antrum tubular, rather short, caudally slightly narrower than cephalically; two lateral colliculi, right one distinctly broader; cervical portion of corpus bursae caudally almost as broad as antrum, cephalically more or less dilated, striated, and sometimes with spots between lines, looking somewhat marmorate; caudal margin of cervical portion more or less scalloped, caudolaterally sometimes with sclerotized areas; cestum more or less long with a longitudinal carina; corpus bursae long, rather broad; signum with a transverse fold and two rather smooth, weakly sclerotized areas somewhat narrowed to their ends and located caudad and cephalad of fold.

TYPE.—Holotype, ♀ (genitalia slide 4424, JFGC), Bolivia (ex Germain); BM.

OTHER SPECIMENS EXAMINED.—Bolivia: ♀ (genitalia slide 4532, JFGC), no exact data (ex Germain); USNM. ♀ (genitalia slide M. 1030), Chapare, 400 m., June 1951 (R. Zischke); ZSM.

REMARKS.—The species was established on the basis of a single female specimen; the male is unknown. The two females, additionally examined by the present author, differ slightly from the type. In one of these females (Chapare; slide M. 1030) there is a narrow, additional costal streak on the forewing between the fourth and fifth main streaks; on the left forewing the terminal spot is joined to the tornal spot, and on each hindwing there are two tornal spots below the large terminal spot. These characters make this female somewhat similar to *bradleyi*, new species, but in the latter the corpus bursae is distinctly shorter, and the lamella antevaginalis, antrum, and cestum have

other shapes. In the other female of *igniflora* ("Bolivia"; slide 4532) the preapical spot of the forewing includes only one cream-white costal mark, and is narrower connected with the internal, rounded extension of the apical spot. The latter and the terminal spot below it each includes only one cream-white marginal mark. The tornal spot has no cream-white mark on the dorsum or anywhere. The apical spot of the hindwing is less extended internad than in the type of *igniflora*, and has a rather long, cream-white mark at the wing apex. All interspaces between the terminal and tornal spots are reddish orange; in the type of *igniflora* the interspace between the terminal spot and the upper of the tornal spots is cream white. The genitalia of this female also are distinct from those of *bradleyi*, and differ somewhat from those of the type specimen and the female specimen of *igniflora* which has been discussed previously. It is quite possible that in Bolivia there are more than one species similar to *igniflora*, and the specimen from "Bolivia" (slide 4532) belongs to a new species.

Subgenus *Eurynatteria*, new subgenus

Atteria (in part).—Druce, 1901, Ann. Mag. Nat. Hist., ser. 7, vol. 7, p. 439.—Dognin, 1904, Ann. Soc. Ent. Belgique, vol. 48, p. 132.—Meyrick, 1909, Trans. Ent. Soc. London, p. 14.—Dognin, 1912, Hétérocères nouveaux de l'Amérique du Sud, fasc. 6, p. 51.

Pseudatteria (in part).—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytzman, Genera insectorum, fasc. 149, p. 22; 1917, Trans. Ent. Soc. London, p. 6; 1924, Exotic Microlepidoptera, vol. 3, pp. 108, 109; 1936, Arb. Morph. Taxon. Ent. Berlin, vol. 3, p. 104.—Clarke, 1958, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 3, pp. 195, 196.

TYPE SPECIES.—*Atteria heliocausta* Dognin, 1912.

MALE.—Uncus broadly spatulate, widely dilated apically. Vesica with a single, robust cornutus; no cuneus.

FEMALE.—Antrum as broad as sinus vaginalis; no lateral colliculi. Cervix bursae with strong thorns caudally, without striation cephalically.

The name *Euryn* (+*Atteria*, the name of a tortricid genus) is derived from the Greek *εὐρύς*, meaning wide or broad.

Pseudatteria (Eurynatteria) dictyanthes Meyrick

PLATE 31

Pseudatteria dictyanthes Meyrick, 1936, Arb. Morph. Taxon. Ent. Berlin, vol. 3, p. 104.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 116.

FEMALE GENITALIA.—Sinus vaginalis with a narrow, almost linear lamella antevaginalis. Antrum slightly narrower than adjacent

portion of corpus bursae; many strong, rather long thorns in and before caudal section of cervical portion of corpus bursae; caudal half of corpus bursae slightly sclerotized and decorated with some stronger sclerotized, longitudinal folds; corpus bursae elongate, rather broad, rounded cephalically; signum shaped as an irregular, scobinate plate.

TYPE.—Holotype, ♀, Ecuador; DEI.

REMARK.—The species is known only from its holotype.

Pseudatteria (Eurynatteria) buckleyi (Druce)

PLATES 32, 33

Atteria buckleyi Druce, 1901, Ann. Mag. Nat. Hist., ser. 7, vol. 7, p. 439.

Atteria purpurea Dognin, 1904, Ann. Soc. Ent. Belgique, vol. 48, p. 132. [New synonymy.]

Pseudatteria buckleyi.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytsman, Genera insectorum, fasc. 149, p. 22.

Pseudatteria purpurea.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus pt. 10, p. 16; 1913, in Wytsman, Genera insectorum, fasc. 149, p. 22.

MALE GENITALIA.—Uncus spatulate, obtriangular, narrow at base, and widely dilated and rounded distally. Valva subrectangular with external margin rounded; costa sclerotized, and with a dentate harpe. Aedeagus thick with a broad, apical process; cornutus long, dilated in basal portion, and narrowly tapering in distal portion.

FEMALE GENITALIA.—Sinus vaginalis with a lamella antevaginalis narrow at middle and dilated laterally. Antrum scobinate cephalically; thorns in cervical area moderately long; caudal half of corpus bursae distinctly sclerotized; corpus bursae broad, cephalically rounded; signum shaped as a plate with serrated outline, and cephalically with an elevated carina.

TYPES.—Holotype of *buckleyi*, ♂ (genitalia slide 5769), Intag ("Intaj"), Ecuador (C. Buckley; 6609); BM. Holotype of *purpurea*, ♀ (genitalia missing), Loja vicinity, Ecuador, 1893 (Dognin); USNM.

OTHER SPECIMENS EXAMINED.—Ecuador ♂, and 3 ♀♀ (genitalia of one, slide 6625), Chiguinda (C. Buckley); BM. ♂, Sarayacu (C. Buckley); BM.

REMARKS.—In compliance with the labels in the collection of the British Museum (Natural History), J. Durrant supposed that *buckleyi* and *purpurea* might merely be the two sexes of one species. The present author approves this point of view and finds especially convincing the fact that the markings of the forewing are very similar in both *buckleyi* and *purpurea*. The differences in the markings of the hindwing may be explained by sexual dimorphism, already observed in two other species of the same subgenus *Eurynatteria*. Thus, in the males of *cantharopa* Meyrick these markings also are more developed and confluent, while in the females they consist

of separate spots. In the females of *heliocausta* Dognin the markings of the hindwing are somewhat more scanty than in the males, and only in the form *baccheutis* Meyrick of this species is the difference less striking, because of the development of additional spots. A careful comparison of the male specimens of *buckleyi* and the female specimens of *purpurea* permits recognition of common elements in the markings of the hindwing. This is particularly convincing in the specimens of both sexes, collected in the same locality (Chiguinda).

The abdomen of the holotype of *purpurea* had been badly damaged, probably at the time the specimen was caught or shortly after, and the genitalia became lost. For this reason it has become necessary to examine and photograph the female genitalia of a specimen other than the holotype, but superficially similar to it.

Pseudatteria (Eurynatteria) cantharopa (Meyrick)

PLATES 34-36

The holotype of this species is a female with the abdomen missing. The present author had the chance to examine two more female specimens originating from the same locality as the holotype (Chulumani, Bolivia) and well matching the latter. Moreover, he had at hand six more specimens from Peru, similar to those from Bolivia, but nevertheless distinct from them in some external characters, constant in all of the examined specimens. The female genitalia give no grounds for separation of the Peruvian moths as a species distinct from *cantharopa*, but the external appearance permits treating them at least as a subspecies.

Pseudatteria (Eurynatteria) cantharopa cantharopa
(Meyrick), new status

PLATE 34

Atteria cantharopa Meyrick, 1909, Trans. Ent. Soc. London, p. 14.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 73.

Pseudatteria cantharopa.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913 in Wytsman, Genera insectorum, fasc. 149, p. 22.—Clarke, 1958, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 3, p. 195, pl. 97, fig. 2.

FEMALE.—Antenna black. Labial palpus with terminal segment and outer surface of second segment black; basal segment, inner surface and dorsal edge of second segment greenish black. Head orange with a median black stripe expanded on vertex. Thorax and tegula deep bluish black; patagia, base and fringes of tegula, two anterior, three median, and two posterior spots on thorax orange. Abdomen

copper brown, sometimes with bluish-green reflection. Forewing orange; two broad, transverse, prismatic bluish-green bands, crossing wing from costa to dorsum, one at middle of wing, other between middle band and base of wing; a large, concolorous, irregularly ovate spot external of middle band, and remote from all wing margins; mentioned bands and spot outlined with black; a moderate, black costal spot near base of wing; three smaller, concolorous spots along basal portion of dorsum; two black, rather small spots in interspace of transverse bands, one on costa, another below it, and an obliterate spot on dorsum in same interspace; four black spots in external portion of costa, one spot on wing apex, three on termen, and two or three on tornus; cilia concolorous with adjacent portions of wing. Length of forewing 14 mm. Hindwing orange with brownish-black markings consisting of two large spots on costa, two or three almost equally large spots on disc, one small spot on wing apex, four equally sized spots on termen, two large spots on tornus; dorsal area of wing broadly black; cilia concolorous with adjacent portions of wing.

TYPE.—Holotype, ♀ (abdomen missing), Chulumani, Bolivia, December 1906, 6500 ft. ("S."); BM.

OTHER SPECIMENS EXAMINED.—2 ♀♀ (genitalia of one on slide M.1011), Yungas, Chulumani, Bolivia, 1500–2000 m. (Schulze); ZSM.

REMARKS.—The male of this subspecies is unknown; the female genitalia as in subspecies *pulchra*.

Pseudatteria (Eurynatteria) cantharopa pulchra, new subspecies

PLATES 35, 36.

Similar to subspecies *cantharopa*, but without black dots in interspace of transverse bands of forewing. Length of forewing 15–16 mm. Hindwing of female as in *cantharopa*, but with spots on disc more or less confluent with costal spots; interspaces of marginal spots more or less darkened with brown; in male brown dorsal area of hindwing widely distributed over disc, and marginal spots more or less confluent with themselves; cilia of hindwing brown in both sexes.

MALE GENITALIA.—Uncus subeordate on a short stalk. Valva oblong with external margin rotundate; costa with a short, angulate harpe at about middle; sacculus rather cylindrical at base, then narrowly extended along ventral margin of (folded) valva. Aedeagus thick with a rotundate coecum penis; a single, large cornutus broad in basal portion and with a long, tapering distal process.

FEMALE GENITALIA.—Sinus vaginalis with a narrow lamella antevaginalis roundly dilated laterally. Antrum cephalically encircled by a rather broad area of cervical portion of corpus bursae covered

with strong, numerous thorns; cervical portion of corpus bursae membranous, broader than corpus itself; a broad, sclerotized girdle located cephalad of cervical portion, and surrounded by small, sclerotized dots, in part confluent among themselves; corpus bursae broad, rounded on fundus; signum shaped as a scobinate, slightly folded plate.

TYPES.—Holotype, ♂ (genitalia slide 99—Obr., 1964), Chachapoyas, Dept. Amazonas, Peru, 1889 (M. de Mathan); allotype, ♀ (genitalia slide 100—Obr., 1964), Peru (M. de Mathan); USNM. 67565 Paratypes: ♂, Peru (M. de Mathan); ♂ (genitalia slide 6623), 2 ♀♀ (genitalia of one slide 6624), Chachapoyas, Dept. Amazonas, Peru, 1889 (M. de Mathan); BM.

Pseudatteria (Eurynatteria) heliocausta (Dognin)

PLATES 37–39.

Atteria heliocausta Dognin, 1912, Hétérocères nouveaux de l'Amérique du Sud, fasc. 6, p. 51.

Pseudatteria fornicata Meyrick, 1917, Trans. Ent. Soc. London, p. 6.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 143.

Pseudatteria metacapna Meyrick, 1924, Exotic Microlepidoptera, vol. 3, p. 108.—Clarke, 1955, op. cit., vol. 1, p. 204.

Pseudatteria heliocausta.—Clarke, 1958, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 3, p. 196, pl. 98, figs. 1–1c, 2–2c.

MALE GENITALIA.—Uncus broad, subcordate with a short stalk. Valva oblong, rotundate externally; costa with a rotundate-triangular harpe before middle; sacculus thickened at base, then narrowly extended along ventral margin of (folded) valva. Aedeagus moderately thick with a rotundate apical projection; cornutus strong, corniform, narrow and tapering distad, dilated basad.

FEMALE GENITALIA.—Sinus vaginalis with a rather broad lamella antevaginalis roundly dilated laterally. Antrum covered cephalically by caudal margin of cervical portion of corpus bursae with many thorns; a sclerotized, mosaic area at right side of caudal section of corpus bursae; latter broad; signum shaped as a plate with a narrow, scobinate margin not closed caudally, often with a narrow, oblique carina, and somewhat variable in form.

TYPES.—Lectotype of *heliocausta*, ♂ (genitalia slide 2—Obr., Feb. 24, 1961), San Antonio, District Cali, Columbia, 2000 m., Sep. 22, 1908 (A. H. Fassl); ♂ lectoparatype (genitalia slide prepared by A. Busek, Apr. 4, 1926), same data; USNM. Lectotype of *fornicata*, ♀ (genitalia slide 4420, JFGC), San Antonio, District Cali, Colombia, 5800 ft., November 1907 ("R."); BM. ♀ lectoparatype of *fornicata* (genitalia slide 4431, JFGC), same locality; USNM. Lectotype of *metacapna*, ♀ (genitalia slide 4421, JFGC), San Antonio, District Cali,

Colombia, 8000 ft., January 1909; lectallotype, ♂ (genitalia slide 4422, JFGC), same data; BM.

OTHER SPECIMENS EXAMINED.—Colombia: 2 ♀♀, Bogotá, Cundinamarca (Child); BM. ♂, "Mt. Socorro," 12,500 ft., 1920 (Meyrick Collection); BM. 4 ♂♂ (genitalia of one, slide 6613) and 6 ♀♀, Rio Aguacatal, W. Cordillera, 2000 m. (A. H. Fassl); BM. ♂ and 2 ♀♀ (genitalia slides 4432–4434, JFGC), same data; USNM. ♂, ♀, San Antonio, District Cali, 240 m. (A. H. Fassl); BM. ♂ (genitalia slide 630-Obr.), District Cali, 6500 ft., Jan. 24, 1935; AMNH. ♀, Cañon del Monte Tolima, Valle del Cauca, 1300 m. (A. H. Fassl); BM.

REMARKS.—Somewhat similar to *symplacota* Meyrick and with a cornutus almost of the same shape. Differs in having the genitalic characters of the subgenus *Eurynatteria* and in some details of the markings of the wings. The latter vary a little in the confluence of the apical and terminal streaks of the forewing and the development of spots in the internal areas of both wings; the extreme form with numerous discal spots received a separate name *baccheutis* Meyrick. The hindwing of male is suffused with yellowish olive and usually has the subdorsal spots larger and more numerous.

Pseudatteria (Eurynatteria) heliocausta (Dognin) form *baccheutis* Meyrick,
new status

PLATES 40, 41

Pseudatteria baccheutis Meyrick, 1924, Exotic Microlepidoptera, vol. 3, p. 109.—

Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 62; 1958, op. cit., vol. 3, p. 195, pl. 97, figs. 1–1c.

FEMALE GENITALIA.—As in the nominate form of *heliocausta*.

TYPE.—Lectotype, ♀ (genitalia slide 4437, JFGC), Volcán de Miravalles, Guanacaste and Alajuela, Costa Rica, 1895 ("U."); BM.

OTHER SPECIMENS EXAMINED.—Costa Rica: ♀ (genitalia slide 4438, JFGC), no exact data, 1906 ("U."); BM. ♀ (genitalia on slide), "La Caja," 8 km. west of San José, 1930 (Schmidt); DEI.

Remarks.—Meyrick described *baccheutis* as a separate species on the basis of two specimens, one of which was the present lectotype, and the other a male which is now missing. The photographs in plate 40 give a clear idea of *baccheutis* as a form very close to *heliocausta*. The only important difference between them is in the discal and dorsal spots, well developed in *baccheutis* and only slightly (and not always) indicated in *heliocausta*. The discal dots of the hindwing show a similar arrangement in both, although they also are better developed and more numerous in *baccheutis*. There is no difference in the female genitalia of both, and this is the reason for treating *baccheutis* and *heliocausta* as conspecific. It is quite possible that *baccheutis*, originat-

ing from a rather widely remote locality, might be a geographical subspecies of *heliocausta*, but this cannot be proven until more material is available.

Subgenus *Sphaeratteria*, new subgenus

Pseudatteria (in part).—Meyrick, 1930, *Exotic Microlepidoptera*, vol. 3, p. 606; 1932, *op. cit.*, vol. 4, p. 254.—Clarke, 1958, *Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick*, vol. 3, pp. 195, 200.

TYPE SPECIES.—*Pseudatteria symplacota* Meyrick, 1930.

MALE.—Uncus with a ventral, transverse carina in slightly dilated basal portion; terminal portion of uncus equally broad. Vesica with a single, robust cornutus; no cuneus.

FEMALE.—Antrum and cervical portion of corpus bursae fused together, forming a globular dilatation as broad as sinus vaginalis; cephalic section of this globe densely covered with thorns.

The name *Sphaer* (+*atteria*, the name of a tortricid genus) is derived from the Greek *σφαῖρα*, meaning a ball or a sphere.

Pseudatteria (*Sphaeratteria*) *symplacota* Meyrick

PLATES 42, 43

Pseudatteria symplacota Meyrick, 1930, *Exotic Microlepidoptera*, vol. 3, p. 606.—Clarke, 1955, *Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick*, vol. 1, p. 300; 1958, *op. cit.*, vol. 3, p. 200, pl. 100, figs. 1-1c, 3-3c.

Pseudatteria anemonantha Meyrick, 1932, *Exotic Microlepidoptera*, vol. 4, p. 254.—Clarke, 1955, *Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick*, vol. 1, p. 46; 1958, *op. cit.*, vol. 3, p. 195.

MALE GENITALIA.—Uncus moderately broad, spatulate; at base slightly dilated, and bearing a small, foldlike, transverse carina on ventral side. Valva subrectangular with external margin almost vertical, slightly convex; costa sclerotized, simple; sacculus slightly thickened at base, then narrow. Aedeagus moderately thick; a single, large, strong cornutus, bent slightly distad of middle; distal portion of aedeagus tapering and ending acutely, basal portion broader and longer.

FEMALE GENITALIA.—Sinus vaginalis with a narrow lamella antevaginalis. Antrum and cervical portion of corpus bursae fused together and forming a globular body covered cephalically with dense thorns; cestum short, almost linear; corpus bursae moderately long, broad, cephalically rotundate; signum a moderate platelet with a stronger, horseshoe-shaped, rather broad, spinulate emargination.

TYPES.—Holotype of *symplacota*, ♀ (genitalia on slide 4427, JFGC), Balzapamba, Bolivar, Ecuador, between November 1893 and February 1894 (M. de Mathan); BM. Holotype of *anemonantha*, ♀, Marcapata, Peru; DEI.

OTHER SPECIMENS EXAMINED.—Peru: ♀, no exact data; DEI. ♀ (genitalia slide 4530, JFGC), "pseudotype" of *anemonantha*, Marcapata, 1934 ("H."; Meyrick Collection); BM. ♀, same locality, 4500 ft.; BM. ♀, La Merced, Junin, 2000–3000 ft. (Walkins; 6606); BM. ♀, Rio Chanchosmayo ("Chanchamayo") (A. M. Moss); BM. Bolivia: ♂ (genitalia on slide 6614), Las Yungas, La Paz (16477); BM. 4 ♀♀, same locality, 1908 (Seebold; 16479–16482); BM. ♂ (genitalia on slide 5–Obr., Feb. 24, 1961), and ♀ (genitalia slide 4430, JFGC), same locality (ex Rothschild Collection; 16478, 16483); USNM.

REMARKS.—The female specimen in the British Museum (Natural History), indicated as the type of *anemonantha* (Clarke, 1958, p. 200), is merely a pseudotype which was collected in 1934. The real holotype of *anemonantha* is deposited in the Deutsches Entomologisches Institut, Berlin; it was seen by the present author and compared with other examined specimens of this species.

The species varies in the size and shape of the marginal spots of the forewing and in the mode of their confluence among themselves and the smaller, contiguous spots. The number and size of the discoidal spots are inconstant. On the hindwings of the females only the terminal and subterminal spots are present; the males have some additional spots and oblique streaks also in the discoidal area.

Appendix

The three species below were described as members of the genus *Pseudatteria* or were transferred additionally to it.

Idolatteria orgias (Meyrick), new combination

Pseudatteria orgias Meyrick, 1930, Exotic Microlepidoptera, vol. 3, p. 607.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 227; 1958, op. cit., vol. 3, p. 199, pl. 99, figs. 3–3c.

Family Tortricidae, subfamily Tortricinae, tribe Archipini.

Idolatteria xanthocapna (Meyrick), new combination

Pseudatteria xanthocapna Meyrick, 1930, Exotic Microlepidoptera, vol. 3, p. 607.—Clarke, 1955, Catalogue of the type specimens of Microlepidoptera in the British Museum described by Edward Meyrick, vol. 1, p. 326; 1958, op. cit., vol. 3, p. 200, pl. 100, figs. 4–4b.

Family Tortricidae, subfamily Tortricinae, tribe Archipini.

Eumimographe lydia (Druce), new combination

Atteria lydia Druce, 1901, Ann. Mag. Nat. Hist., ser. 7, vol. 7, p. 440.

Pseudatteria lydia.—Meyrick, 1912, in Wagner, Lepidopterorum catalogus, pt. 10, p. 16; 1913, in Wytsman, Genera insectorum, fasc. 149, p. 22.

Family Oecophoridae.

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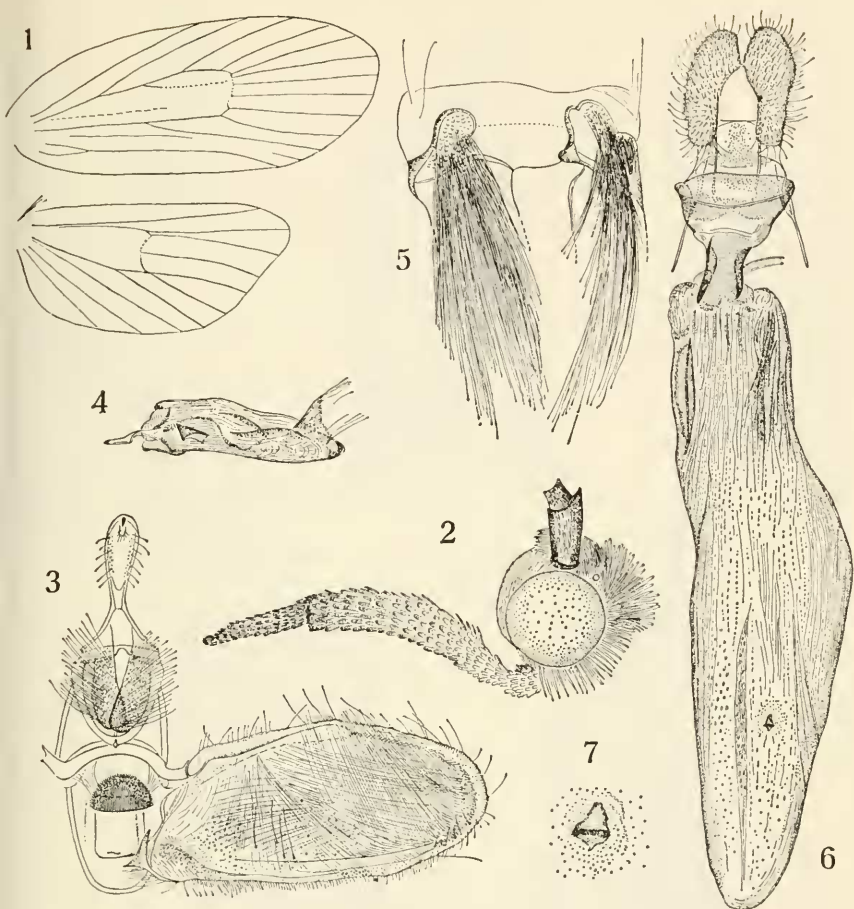
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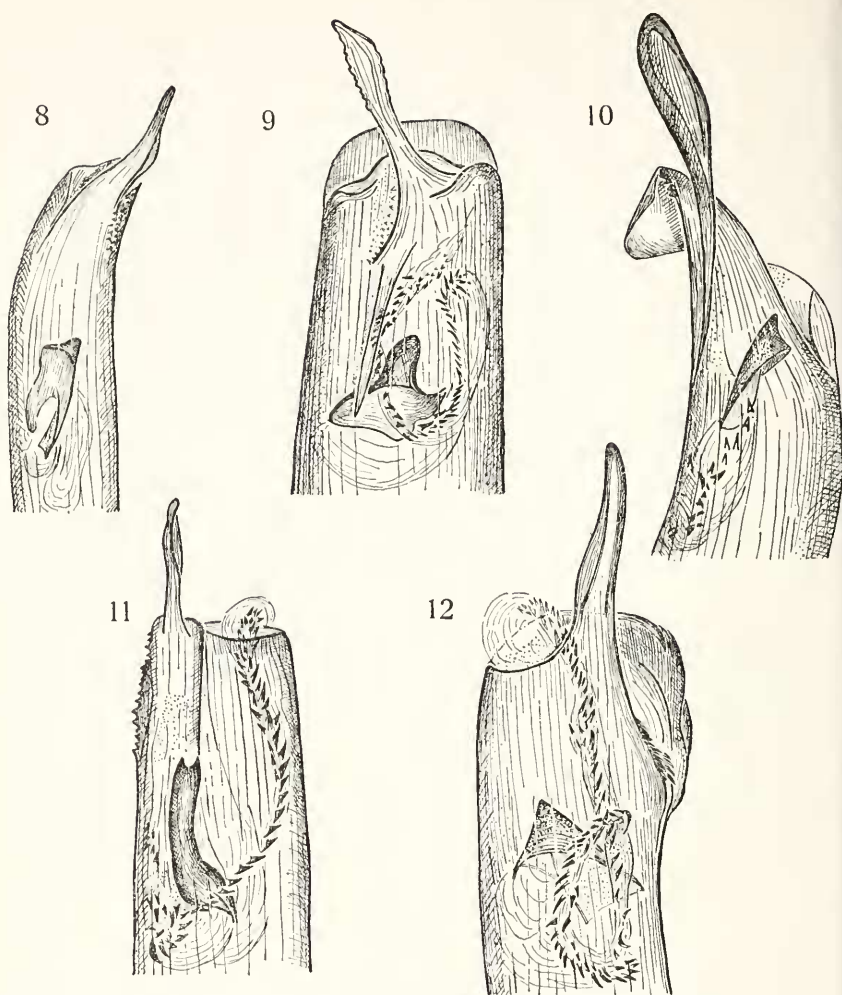
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FIGURES 1-7.—*Pseudatteria volcanica rivularis* (Butler) (*potamites* Walsingham): 1, wing venation of female; 2, lateral aspect of head of male. Male genitalia (slide 4412, JFGC; Jalapa, Mexico, 4500 ft., 1887; USNM): 3, caudocephalic aspect (left valvae and aedeagus removed); 4, aedeagus; 5, ventral aspect of eighth-ninth intersegmental membrane with coremata and bases of valvae. Female genitalia: 6, ventral aspect (slide 4408, JFGC; Vera Cruz, Mexico; USNM); 7, signum (slide 4413, JFGC; Jalapa, Mexico, 4500 ft., 1887; USNM).



FIGURES 8-12.—Armatures of aedeagi of *Pseudatteria* species; 8, *P. dognini*, new species (holotype); 9, *P. cladodes* Walsingham (slide 6615; Peru; BM); 10, *P. marmarantha* Meyrick (slide 6611; Cañon del Monte Tolima, Colombia; BM); 11, *P. splendens* (Druce) (slide 6612; Sarayacu, Ecuador; BM); 12, *P. volcanica rivularis* (Butler) (slide 6616; Senahú, Guatemala, 2800 ft., November 1879; BM).